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ABSTRACT

This handbook is designed to assist occupationally skilled individuals to become competent instructors in their field. It covers topics intended to be of interest to new instructors during their first few weeks of teaching. The content is in nine units. Unit 1 presents an overview of the occupational teacher's job and offers some general teaching suggestions. Unit 2 discusses factors affecting learning, needs of individuals, motivating students, and blocks to learning. Unit 3 describes various teaching methods (lecture, demonstration, discussion, questions and answers, role playing, project plus report, personal experience, field trip, and case study) and discusses how to select the proper techniques. Unit 4 covers types, classification, selection, use, and effectiveness of instructional aides, such as texts, chalkboard, flipchart, and handouts. In unit 5, quality control is discussed, including pre- and posttesting, designing tests, the merits of five different types of questions, and teacher self-evaluation. The development, format, and evaluation of a course of study is presented in unit 6. Unit 7 covers lesson plans, performance objectives, and the four steps of the instructional process (preparation, presentation, application, and evaluation). Unit 8 presents the management and noninstructional teacher responsibilities, such as recordkeeping (including inventory and safety survey), and lists questions to help the teacher evaluate his or her activities regarding four areas of noninstructional responsibilities. The final unit reviews what is expected of a teacher and the teacher's responsibilities in working with students. (EM)

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ED149160

HANDBOOK FOR TEACHERS OF ADULT OCCUPATIONAL EDUCATION

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THE STATE EDUCATION DEPARTMENT
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FOREWORD

The purpose of this Handbook is to assist skilled individuals to become competent instructors in their field. It is designed to answer some of the questions that new instructors might have during their first few weeks of teaching.

The Handbook should be given to instructors by directors of occupational programs or directors of adult education classes prior to an inservice program and before teaching actually begins. The Handbook also could be used as a point of departure for a training program or as a means of stimulating discussion during teachers' meetings.

If there is no opportunity for an inservice program, the Handbook can be used by new occupational instructors to give them some insights into the whys and wherefores of the adult teaching-learning process and can be used by them as a handy reference for specific problems that might arise. Experienced teachers may find in the pages some ideas which will assist them with persistent problems in the class or shop. The Handbook also could be used by occupational teacher-training institutions to give their people some insights relative to the teaching of adults.

The Handbook can serve as an emergency "band-aid" but it is in no way to be considered the final, complete, and exhaustive word on the subject of teaching adult occupational classes. Like the iceberg, what is presented here is only a small portion of a much larger and more complex problem. Each of the separate units may be the subject of college courses and requires many hours or even years of practice before any degree of mastery is attained.

Using the Handbook along with the opportunity to ask questions, it is hoped that the newly appointed instructor of adult occupational education can get started in the business of teaching with a minimum of lost motion and wasted effort. Beginning teachers of adult occupational education are encouraged to supplement the ideas presented here by enrolling in appropriate teacher education programs.

The manuscript for the publication was prepared by Richard Sheldon, Coordinator of Adult Occupational Education and Planning, Oswego County BOCES, at Mexico. All who read his humane approach to teaching problems will know that he has faced these situations before with beginning teachers. The figures which punctuate the text and provide the alter ego were developed by William Davies, Commercial Art Instructor, Oswego County BOCES at Mexico, from drawings and ideas submitted by Richard Sheldon. The figures state the problems frequently voiced by the new teacher.

This project was initiated with the cooperation of all the Bureaus in the Division of Occupational Education Instruction and facilitated by Carl Benenati, Chief of the Bureau of Trade and Technical Education. The manuscript was reviewed and suggestions made by Charles A. Stebbins, associate in the Bureau of Trade and Technical Education. The project was coordinated and the manuscript prepared for publication by Nelson S. Maurer, associate in the Bureau of Occupational Education Curriculum Development. Comments and reactions to this handbook and suggestions for its improvement are solicited.

G. Earl Hay, *Chief*
Bureau of Occupational Education
Curriculum Development

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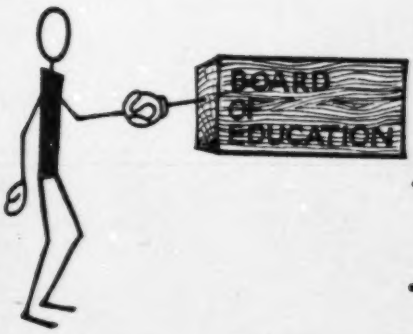
UNIT 1

WHAT IT'S ALL ABOUT

Did you ever get the feeling that you were talking when you should have been listening? Is that how you ended up as a teacher of an adult occupational education class and now wonder what to do next? Don't feel alone because you have lots of company. In fact, when you stop and think about it, if you and all the other teachers of adults knew exactly what to do, there would be no need for a handbook such as this.

Most likely, your help will come in the form of a training program planned and presented by the Director of Occupational Education, the principal of an area occupational education center, an Adult Occupational Education Supervisor, or by someone with another title who shall become your "fearless leader." Until this help arrives, however, there are some things *you* can do that will make what they say more understandable.

First of all, know who your employer is. You must know more than to whom you report. For example, consider the following:



- What is the structure of the organization?

  How did the organization develop to its present form?

- Why does the organization offer occupational classes to adults?

- What other services are offered to the public?

When someone finds out you work for a apecific organization as a part-time faculty member, they are liable to ask questions about the organization and the services it provides. As an employee, you owe it to your employer either to give a reasonably accurate answer or be able to suggest someone who can.

Another item to consider is the jargon associated with teaching. How would you, a teacher of adult occupational education, answer someone's request for an explanation of the difference between adult education and continuing education? Where would you go to find the information? Your answer probably would vary according to the references you used, but don't let that bother you. Most likely, your own group has agreed on some sort of a definition which they believe is correct.

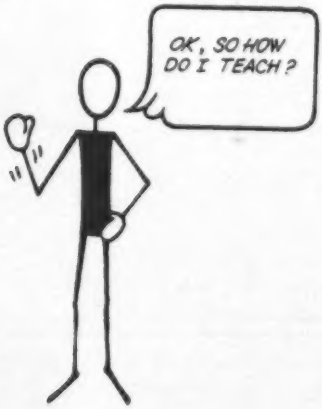
For our purposes here, let us agree that adult education and continuing education are really the same thing. More and more, adults are accepting the fact that school doesn't end at grade 12, and the learning process is lifelong, continuing from birth to death. The definitions of other educational terms with which you may not be familiar may be found in such references as the Dictionary of Education, edited by Carter B. Good.*

There is no such thing as a "simple" class for adults, or for that matter for any group. All teaching requires planning, careful presentation, and evaluation. These topics will be more fully developed throughout the text. But for now, let's consider the importance of the task you have before you: that of teaching adults. The New York State Commissioner of Education recently expressed his thoughts on the growth potential of adult or continuing education by saying:

* Referenee citations are shown on page 96.

"The entire area of adult education, which has its emphasis upon the population served rather than on curriculum levels, is burgeoning. By the year 2000, it may well be, in terms of population served, the largest area of educational concern. Lifelong learning is becoming a commonplace requirement".

Don't panic; it isn't that bad. What is being said is that it all fits together. In the past, the greatest effort was made for those students who were compelled to attend school, that is, the kindergartener through to the high school senior. In the future, adult needs may become equally, or even more, important. This certainly is true for adult occupational education when you consider how fast jobs change. That's why we need teachers who can help others prepare for employment by showing them how it is done on the job.



Well, if you are going to teach skills, provide information, and develop proper attitudes, you will need to know:

- How adults learn
- How you can help them want to learn
- How to plan and teach so your students learn more efficiently
- How to manage a class and shop area
- How to get assistance and advice when you need it

Here are some suggestions that many successful instructors follow which should help you get started. Basically, an instructor should:

- Present things in simple, understandable terms, going from the easy to the difficult, and the simple to the complex. Show how new material relates to information already known by the students.

- Be approachable. A joke told at the proper moment can lift a group out of its tiredness and arouse fresh interest. However, a joke should always have some bearing on the discussion.

- State thoughts positively without being dogmatic, interestingly without being entertaining only, and fairly without merely catering to the opinions of the class.

- Deal with the concrete and use common materials for purposes of illustrations.

- Attempt to involve all students in the various class activities. This requires the establishment of a friendly student-teacher relationship.

- Know the names of each student as soon as possible; the use of a seating chart may help.

- Encourage students to ask relevant questions. Make an effort to understand all the implications of a question and to answer it completely. If the answer to a question asked in good faith is covered at some other time, the questioner should be given a brief answer and urged to bring the matter up again at the proper point.

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- Be careful not to "talk down" to your students. Be courteous and friendly but not condescending. Treat them with respect and do or say nothing that would embarrass or humiliate them. Treat students as the adults they are.

- Outline carefully the materials which are to be presented at each class session and then follow the plan. This prevents the discussion from wandering away from the subject.

- Make the discussions interesting by varying the methods of presentation and using words that are familiar, short, vivid, and concrete. Avoid the needless repetition of "pet" words and phrases. Do not monopolize the discussion; the students did not come to hear your life history.

- Be aware that it is impossible to answer all questions that may be asked in the classroom. It takes a great deal of courage to say, "I don't know, but I will look it up and give you the answer next time." Be willing to admit when a specific topic is outside your field. The respect of a class is not lost in such a circumstance, just as long as it doesn't happen too often. An attempt to bluff one's way out of a situation like this usually brings its own penalty. An instructor should be a specialist in a specific field, and also have enough general knowledge to deserve the respect of the students.

- Use the voice for emphasis. Avoid droning through the class period in a monotone, or speaking so fast the words are indistinct, or speaking to the chalkboard rather than to the class.

- Remember that teaching is not taking place unless the students are learning. Motivating students to learn is a major part of the teaching task; but more about that in Unit 2.

You won't have to because you will prepare a guide for each presentation, called a lesson plan, which will serve as a memory jogger.

If you are a beginning occupational education teacher, you should recognize the difference in the emphasis that is placed on things when working at a regular job and when teaching. For example, consider the following:

When Working:

- Your interest is in the finished product or service
- You do the work
- You follow the most efficient way to get the task done
- Quality and quantity at minimum cost are the tests of proficiency
- Someone else, such as an inspector, checks your work

When Teaching:

- Your interest is in the student; the product or service rendered is secondary
- The work is done by the student
- You present instructional content in the most efficient way for learning
- Quality comes first and then practice improves quantity
- You do your own testing or evaluating

One other thing: have you tried listening?

Teaching is not always talking. Good teachers realize the value of listening in order to understand what the other person is saying; not merely hearing the words but knowing what is meant. This requires asking questions to clarify items and restating the other person's point of view to be certain you have understood it correctly. Listening is a skill that takes a lot of practice to develop, but is well worth doing.

Summary

As an instructor of adult occupational education you will:

- Teach the skills necessary to obtain and hold a job
- Provide the information required to perform those skills successfully and safely
- Help develop attitudes that will insure continued employment
- Use trade standards as the measure of student success

Teaching is:

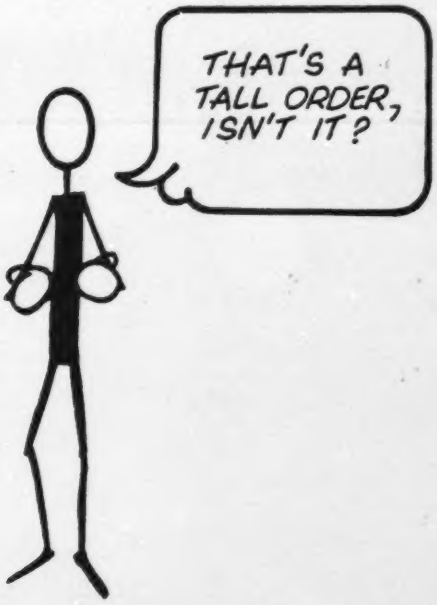
- Determining needs
- Planning
- Telling and showing
- Providing practice
- Checking results

Right! All these activities help to bring about a change in the student's behavior. This change is called learning, and without it, there is no teaching.

Looking Ahead

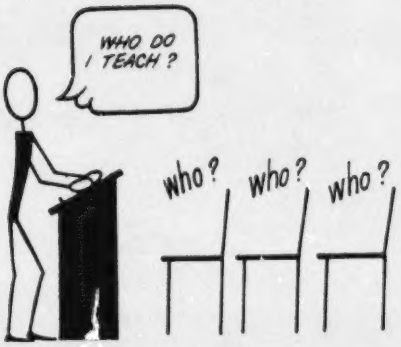
In this first unit, we have presented an overview of your job as a teacher, and offered same general suggestions to help you get started. In the remaining sections we will discuss:

- Individual differences in Unit 2
- Instructional techniques in Unit 3
- Teaching aids in Unit 4
- Tests and evaluation in Unit 5
- Content and the development of a course of study in Unit 6
- Lesson plans and the four-step teaching method in Unit 7
- Shop management in Unit 8
- Professional growth in Unit 9



UNIT 2

WHO



WHO's come in all sizes, shapes, and descriptions. Each student brings to class a unique set of knowledges, attitudes, and abilities which, at times, can help or hinder the teaching-learning process. They also come from different backgrounds, and with a wide variety of experiences. Don't overlook this vast reservoir of information and talent when you develop your lesson presentations. This is an excellent way of getting the students involved in the instructional process.

During the first session you will have to show your students that you know your field, and can present information in such a way that they will want to come back. Also, you may have to convince many of them that they can succeed, and that you are there to help them, not judge them. You must show them that you are on their side. Treat each student as an individual. Try to find some strengths to praise, and provide for immediate satisfaction through success early in the course.

Many of your students may:

- Fear school
- Have done poorly in school
- Be shy
- Have a different value system

- Dislike authority
- Have language problems
- Lack motivation
- Be insecure
- Come from different backgrounds

These factors directly affect the students':

- Reasons for wanting to learn
- Speed and thoroughness of learning

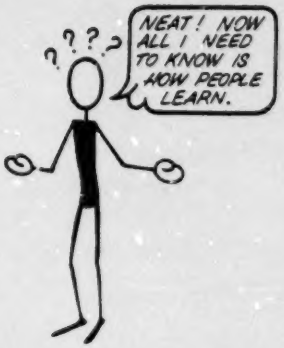
Thus, as you plan your lessons you must consider each individual's:

- Interest
- Past experiences
- Memory
- Self-confidence
- Intelligence
- Concentration
- Well-being
- Imagination

But more about that in Unit 3. For now, you should find out why the students are coming to your class (their needs) and what they expect to do with the skills and knowledge they receive (their goals). Are they new entrants to the labor market, apprentices, or persons in need of new skills for upgrading within their present job, or changing to a different job?

Many potential students do not come to adult classes because, as children, they had unpleasant experiences with schools and the people in them. To calm any fears that your students may have, assure them that:

- Teachers are helpers, not authority figures
- Grades are used to indicate how well each student is performing and progressing toward his or her individual objectives and are not used to compare one individual with another
- In a discussion, any relevant point of view is welcomed
- They are among friends and should "join in" class activities



People learn because they have needs. There are many lists of typical needs of human beings, and no two lists agree completely. Yet, each has some items in common. Some of those common items are of interest here because they have to do with the learning process, and include the need to:

- Think
- Criticize
- Create
- Be useful
- Communicate
- Be accepted
- Move around
- Be challenged

An instructor is teaching, and students are learning when some of these needs are met, and anticipated changes in the students' behavior are brought about.

No, not yet! We are ready now to talk about motivation. This means that somehow you, as the teacher, must present the lessons in such a way that the students will want to tackle them. One way is to show a relationship between learning objectives and learning activities. The more reasonable and meaningful the activities are to the learners, the more effort will be put forth.

The instructor who includes several small but challenging goals that can be met early in the learning process will be rewarded by students who will try harder when the going gets rough. Remember, early success is important even to those who appear to be the most confident, because this may be a bluff which hides some real fears of not being able to perform. In any case, very few things are more effective in producing success than success itself, and this can be built into most lessons.

Below are listed some basic principles of learning with suggestions for motivating adult students to learn.

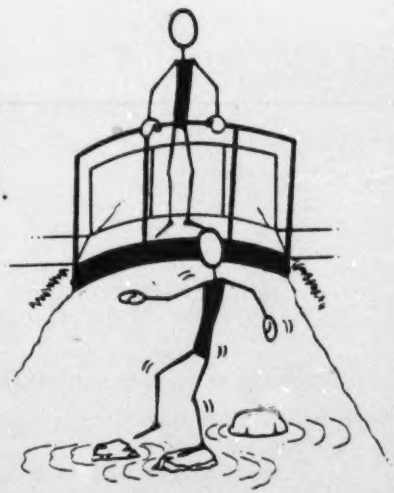
- First impressions are the most lasting.
  - First class meetings are very important.
  - Thorough preparation is vital to that first meeting with the class.
  - Know each student's needs in advance, if possible.
  - Show how the course will meet these needs.
- Practice makes perfect.
  - Practice should follow instruction almost immediately.
  - Practicing the right thing is important.
  - An activity should be repeated often and in a variety of ways, if possible.
  - A skill or knowledge that is not practiced is soon forgotten.
- Students remember pleasant things better than unpleasant ones.
  - Build the interest of the students.
  - Provide for success in each lesson.
  - Teach the subject for which the student is enrolled.
  - Present lessons in a vivid, exciting way.
  - Avoid dull or boring presentations.

- Students learn easier when things are meaningful to them.
  - Base the instruction on the stated needs of the students.
  - Check often to see that you are presenting what the students want and need.

- Provide at each session some new knowledge or skill that can be used immediately.
- Present information on the level of the student's background and experience.
- Use a variety of methods and activities to make the presentations interesting and stimulating.
- Learning is easier when new facts are related to known facts.
- Build instruction upon step-by-step learning situations.

- The more the students are involved with the instructional process, the more likely they are to learn.
  - Encourage students to participate; don't let them just sit, look, and listen.
  - Provide opportunities for students to help each other.
  - Let students share their knowledge.

- Students learn best in situations in which they feel secure.
  - Let students know you like and enjoy doing things with them.
  - Teach with enthusiasm.
  - Show students you respect them as individuals.
  - Praise good work.
  - Be moderate with criticism. First, find something good to say, then, make the criticism, and end with a smile.



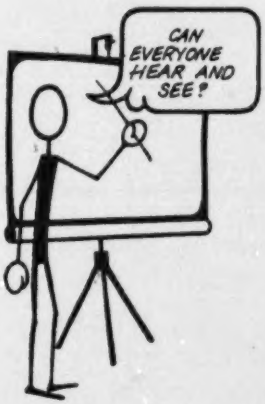
  - When a student makes a mistake, find out why the mistake was made. Were your directions really understood?
  - Be willing to learn from the students.

- Give students a chance to be successful.
  - The desire to learn is deadened by too many failures.
  - Provide short units of work to give students the feeling of success.
  - Give approval promptly when the student is successful.

Progress in learning can be slowed down due to frustrations, distractions, fatigue, poor attitudes, and indifference. Research also indicates that while the ability of older adults to learn does not change with the years, the speed at which they learn does slow down. The instructor must learn to recognize these inhibiting factors and adjust his or her teaching so that the learning process is slowed down as little as possible.

Physical factors that relate to some adults which you need to consider include:

- Decreased hearing which requires the instructor to:
  - Repeat occasionally
  - Move about the room
  - Use clear enunciation
- Decreased vision which requires:
  - Clear and large writing on the chalkboard
  - Easy-to-read printed materials
  - Seating arrangements that consider special needs such as hearing or sight impairment
  - Good illumination in the instructional areas
- Decreased learning rate which requires:
  - A teaching rate geared to the student's learning rate
  - Frequent opportunities for practice



- Small work units which provide frequent successes as well as stimulating challenges
- The use of only relevant material so time is not wasted

- Fatigue after a full day's work which requires:
  - A well-ventilated instructional area
  - The use of frequent breaks (same as on the job).
  - The students to be active and participate in the instructional activities
- Decreased ability to recall details of the immediate past which requires:
  - Relating the lessons to the specific needs of the students
  - Repeating the instructional content in a variety of ways
  - Using a sequential approach that relates previous materials to present

Now, let's consider anxiety. Under ordinary circumstances, a need creates a mild state of anxiety and, in this state, the person is ready or motivated, if you will, to learn in order to solve a problem or meet a need. The intensity of the anxiety will determine what is learned and the rate at which it is learned. Mild anxiety is stimulating. Too much anxiety prevents students from even trying.

As we mentioned earlier, learning is influenced by several factors, with some helping the process and others hindering it. The positive incentive or reward for effort which comes from need fulfillment is also at work.

Anything that encourages learning is motivating. This, in turn, increases the rate of learning and retention. Therefore, the degree of behavioral change is accelerated.

The instructor must be ready to recognize learning blocks in the form of emotional, social, and psychological factors, and to find ways to remove them.

Consider such blocks to learning as:

- Feelings and attitudes
  - Fear
  - Boredom
  - Ridicule
  - Confusion
  - Lack of confidence
- Physical surroundings
  - Too hot
  - Too cold
  - Too dark
  - Too bright
  - Disorderly
  - Inconvenient layout
  - Wrong and/or broken equipment

The classroom atmosphere should be firm but friendly and accepting. Don't preach and/or be afraid to use wit or humor. Good communication between you and the students is very important. Before or after class show an interest in their outside concerns or problems. Remember to be flexible but not wishy-washy.

Many times both you and your students will have put in a day's work before coming to class. Some may have worked out-of-doors in the cold and, therefore, the temperature of the room that is comfortable to others puts them to sleep.

Most adults prefer to work in a place that is orderly and convenient. Inform the students of the problems that arise when tools are misused and/or not returned to their

proper storage place. Require each student to accept his or her share of the responsibility for keeping the work area neat, orderly, and efficient.

Summary

Adults

- Want to be treated as adults
- Bring many experiences to class that can be used when teaching
- Might have a negative attitude toward schools
- Need an orderly and convenient place in which to work
- May have problems which must be considered when teaching
- Want to get to work with a minimum of preliminary buildup
- Need to be stimulated
- Have needs that must be met
- Want work that is functional and of immediate use
- Need small and continued opportunities for success

UNIT 3

HOW

Teaching and learning are parts of a cooperative process. You must understand your students and know how they will respond to various methods of teaching.

To make your teaching effective, base it on the following principles of learning:

- Readiness - show your students a need for acquiring each specific bit of information or skill that you present. Students learn best when they feel a need for the material given in the lesson.

- Effect - provide an opportunity for your students to successfully use the information or skill you present. Students learn best when they can experience success with the material being learned.

- Practice - give your students a chance to practice the information or skill you present. The more students practice this material the better they can do it.

As a teacher of adults, you need to keep in mind that they:

- Can usually see the relationship between what they know and what they are learning
- Are willing to try an activity if it relates to their specific goals.
- Are active learners and want the chance to apply what they are learning
- Are thoughtful and need time to think problems through

As we discussed in Unit 2, you will find that each of your students differs in many respects. As a teacher of adults, you will have to recognize these differences and adjust your teaching techniques to fit the various learning abilities of your students. Some factors that affect a student's ability to learn include:

- Interest - Without student interest, your instruction becomes more or less futile. Students' interest is related to the need they have for the material being taught.

- Ability to grasp new concepts - Some of your students will respond quickly to new ideas while others will take longer. For some lessons you will have to repeat the information several times and use a variety of teaching techniques in order to get the material across to all of your students.

- Past experiences - Each student brings to class a different background of experiences. This background forms the basis for receiving additional information, and because of this, some of your students will see relationships more quickly than others. For certain types of information you will need to use different teaching approaches, and give several different examples in order that all of your students will understand the lesson being presented.

- Concentration - Some of your students will be able to stay with a problem longer than others. This will necessitate changing the pace of your presentation by breaking up the learning sessions with practice periods or other related types of activities.

- Memory - A student's ability to remember is very important to the learning process. To assist a student's memory, make your presentations vivid, unique, and related to his or her needs.

- Well-being - Mental and physical comfort or discomfort affects a student's power of concentration. Have your teaching environment pleasant and attractive. Put your class at ease and in a cheerful frame of mind before presenting any lesson.

- Self-confidence - Your students will learn easier if they think they can. Learning is difficult for students when they are fearful and apprehensive. Never purposely assign students tasks which are beyond their ability to perform nor do or say anything that would cause them to lose their confidence.

- Visualization - The ability to form mental pictures of things not actually completed helps students to picture a completed job or task before it is started. When presenting a lesson, you might have to use several different examples in order that all of your students grasp the material being presented.

By now you are aware that, as a teacher of adults, you must use a wide variety of teaching methods to fit the various learning patterns of your students. Unfortunately, no one method or combination of methods can be applied with equal success in all circumstances. You will have to experiment with several different approaches to find the right one for a particular lesson.

You will have to develop the ability to decide whether you should present a lesson or demonstration to the entire class or to just one or two students. Presenting material to individuals or to small groups of students is time-consuming, but you can:

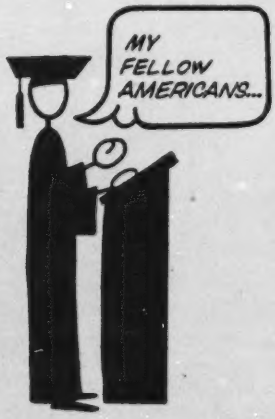
- Be more specific and better meet individual needs
- Adjust your teaching approaches to the individual's acceptance of the material being presented
- Provide remedial work

- Pace your teaching to the individual's learning speed

Giving instructions to a group is useful when presenting basic information and elementary principles because you are able to:

- Give the same information to all students at one time
- Provide for group interaction
- Help individuals work cooperatively towards a common goal
- Save time

Many times you will give information to the class as a whole and, then, work with individuals or small groups during the practice sessions to be sure everyone understands what you presented in the lesson.



LECTURE

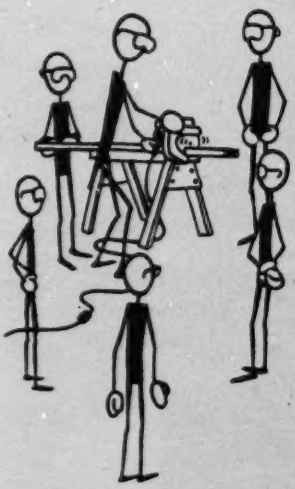
As a teaching method, the lecture:

- Is a quick means of giving a mass of information to a group of students
- Should use only a small portion of a class session because it is usually ineffective
- Used alone, gives students no chance to raise questions about points that are not understood
- Provides no opportunity for students to discuss differences of opinions or contribute to the class discussion

When you use the lecture method, do it with the highest degree of informality that you can achieve without losing the respect of the students. Stand up when talking and occasionally move back and forth in front of the group. Change the pitch, tempo, and volume of your voice when speaking. Try every device you can think of to add variety, spice, and surprise to your presentation. Because of the problems which the average instructor has in arousing and maintaining the interests of the students, the lecture method, by itself, should be used mainly to:

- Develop a background for the course at the opening session
- Present material supplementary to the text assignment
- Bring about a logical correlation between certain phases of work and the principles being studied
- Present current material on which the students should be informed

DEMONSTRATION



Sometimes the best way to get a point across is to actually show or demonstrate what you mean. Some operations or principles are difficult to describe yet are quite clear when you actually go through them as the students watch, or give an example that they can see. This requires extensive use of actual items or the use of chalkboard and charts. The biggest drawback with this method is that it is often difficult to be sure that all the students can see what you are doing.

Here is a good place to use a video tape machine. With such equipment, make a close-up of your demonstration and play it back on a TV where it is easier for all to see. Incidentally, this allows you to save your demonstration for later viewing for those who were absent or wish to review it. This equipment will be discussed in more detail in Unit 4. In any case, the students should have some way to ask questions while the demonstration is in progress or being viewed.

The demonstration method is useful because it:

- Attracts and holds the students' attention
- Is easily understood
- Is convincing
- Ties theory with the application

Using the demonstration methods requires you to plan by:

- Organizing the tasks and points to be emphasized
- Having everything that you will need ready for use
- Using materials similar to those the students will use
- Assuring that everyone will be able to see

During the demonstration you should:

- Describe your objectives and procedures clearly
- Show each step slowly and carefully, relating past experiences to future steps
- Check on your effectiveness by asking questions
- Encourage students to ask questions
- Supplement with literature, models, mockups, or other visual aids
- Summarize key points
- Show other applications of the skills or process just presented

Follow up each demonstration by:

- Requesting students to show you they can do the skills or process just demonstrated
- Giving individual help during practice sessions
- Raising questions to clarify points
- Assisting in the application to individual needs or projects

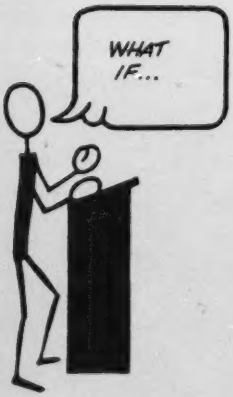
As an occupational teacher, you will use the demonstration very frequently. Tell the students what you are going to do, show them how to do it, let them practice, and then see if they can do it.

DISCUSSION

The discussion method is an excellent means of covering the essential points of a lesson while allowing individuals to ask questions of the instructor or other members of the class. As a discussion leader, you ask questions which serve to provoke a general exchange of ideas or facts. It is also a good way to draw out conflicting opinions. Usually, you will find that most adults are willing and anxious to contribute their opinions even to the point of disagreeing with the instructor or the author of the text. This results in interesting and lively discussions, which are bound to make more lasting impressions than merely lecturing about facts or rules.

When using the discussion method, keep it under control, on the subject, and cut it off at the right time. In other words, you must see to it that pertinent matters are emphasized and that the time is not monopolized by any particular topic or individual. To successfully control a discussion, the leader needs different skills and approaches than are required for the lecture or demonstration methods.

QUESTIONS AND ANSWERS



The question and answer method is one of the occupational instructor's most effective tools and is well-adapted to the teaching of adults. When skillfully used this method:

- Stimulates student participation in class discussions
- Serves to arouse and sustain the interest of the class until you are ready to summarize the lesson
- Assumes an intelligence on the part of the students, an aspect usually appreciated by adults

- Presents an opportunity for students to express an opinion
- Motivates students
- Finds out what students already know
- Spot checks the effectiveness of your instruction
- Clarifies or emphasizes a point
- Aids in the review of materials
- Keeps the attention of the students

Before you begin to use this method, make certain that your questions:

- Have a specific purpose that is related to the topic being discussed
- Require thought rather than a simple memorized reply
- Are limited to one main thought
- Are brief and easily understood

When you ask questions:

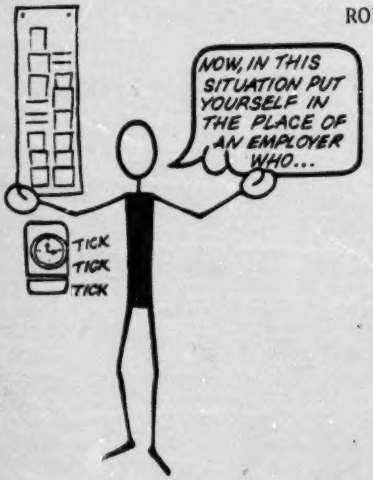
- State the problem before the group
- Give everyone a chance to think of the answer
- Select at random a specific student and call on him or her by name to answer the question
- Use an informal, conversational approach
- Permit answers only from students who have been asked to respond

When you have mastered the art of questioning you will find yourself asking:

- Why do we do it?
- What is its purpose?
- When should it be done?
- Who should do it?
- How should it be done?
- Which is better?

The question and answer method is a useful teaching technique but unless carefully controlled, it might result in a parrot-like repeating of the assigned material by the students to the instructor.

ROLE PLAYING



Role playing may be used to bring together knowledge and experience and show the interrelationship. Designate certain students as characters in an assigned situation, and then, ask them to work the problem through to a solution by acting it out while in character. People will often express views while in character which they would not share as themselves. Banking practices, credit applications, employment interviews, and similar problems lend themselves to this method.

The danger in using this technique is that it may degenerate into a riot of wise cracks and horseplay. You, as the instructor, must try to prevent this from happening by continually reminding the class of the objective of solving the problem or bring the role playing to an immediate halt. Once this method gets out of hand, you will have a hard time getting a class to ever take it seriously again.

PROJECT PLUS REPORT

When combined with a formal report, the assignment of a project or a problem for outside investigation is a good teaching method. By means of a report, either oral or written, students present the results of their study so their fellow students or the instructor may challenge their conclusions, the depth of their thinking, or the thoroughness of their research. For example, a class in blueprint reading could be assigned a report in

the form of a bill of materials which is to be taken from a given drawing; an outstanding accounting student, who otherwise may get bored, can be challenged by an extra project of auditing someone else's practice set and providing the class with a report which they can accept or challenge. In practically all occupational courses, special projects or problems can be designed.

Use the project and report when you wish to:

- Stimulate study in some particular phase of work
- Develop some particular student's originality
- Challenge some unusually good students

PERSONAL EXPERIENCE

The use of personal experiences to illustrate an actual job situation usually is quite impressive. Not only do we put more enthusiasm into the telling of a real experience and, therefore, add life and vitality to a lesson, but we add credibility to what we are saying. If what is being discussed or read about has actually worked on a job, it is much more believable or acceptable than if it is only something out of a textbook.

Of course, avoid the use of real names of individuals or organizations you are talking about. Sometimes what seems like perfectly innocent information to you is not seen the same way to others. Another pitfall to be avoided is the "can you top this" session. The idea is to present some facts of an actual work situation and not tell war stories. If you are not careful, one person's experiences can be followed by other's and each succeeding one embellished a bit to try and out do the preceding one.

FIELD TRIP

A field trip is used when it becomes necessary to obtain firsthand information about a process, product, or job. To be successful, the field trip needs to be planned as carefully as a lesson, because it is a lesson. Like any other lesson, it must be organized with definite educational objectives to identify exactly what the students are expected to learn from the experience.

Before you make too many plans, check with your director or supervisor to find out the school's policy relating to field trips. If trips are permitted, he may have some suggestions or previous experiences which may help you find exactly what you are looking for.

Contact the facility and find out if tours are allowed, and who is in charge of such arrangements. Discuss with this person your reasons for wanting a tour and what you expect your students to gain from the trip. Whenever possible, arrange for a private tour yourself to see if the objectives you have in mind can be met. Confirm all telephone arrangements by letter.

Go over the trip with the class to be sure they know:

- Why they are going
- What they are expected to get from this experience
- Specific points for which they should look
- Safety rules such as smoking restrictions or requirements for safety glasses or other protective equipment
- Transportation arrangements such as where to meet the bus or where to park if driving their own cars
- Time schedule and consequences for being late
- How you expect to evaluate the trip as a learning experience when it's over

During the tour, keep track of everybody, not only to avoid losing anyone, but to be sure they are seeing and hearing what is planned for them. At the end of the tour, a thank you followed by a written note will not only show your appreciation but help assure that the next time you want to take a tour through that facility you will be welcome.

The evaluation of this type of lesson can take forms similar to any other lesson. A discussion can be conducted on the return trip if you are all on a bus, or during the next class. Written reports or tests could be used to get the students' reactions or to identify any misunderstandings. Whatever form of testing you use, remember to notify your group in advance what you have planned in the way of an evaluation.

CASE STUDY

In the case study method, you present the specific details of a problem and then ask the students to suggest the best solution they can, based upon the given facts. They must also be prepared to discuss why they came to the conclusion they did. If properly used, the case study method can be made to yield interesting and instructive solutions that you, as an instructor, may never think of.

At the end of the discussion of each case or group of cases, the instructor should outline or summarize the main points of the solutions.

Other methods, you as an instructor, should consider include:

- The use of outside speakers, either singularly or as a panel, who are experts on some particular topic.
- The use of programmed instructional materials for individualized study. Preview them to see if the materials are appropriate and the student can use them without becoming frustrated.

Which herb is the best to use in the kitchen? What is the best size paint brush for a commercial artist to buy? The choice depends upon what it is you want to do. A pipe wrench will tighten a nut and bolt. A proper sized adjustable wrench will do a better job and without as much chance of damaging the nut. The right sized box or open-end wrench will work even better. In teaching, some processes need to be demonstrated and a lecture just will not do the job as well as a film, TV tape, or an actual live demonstration. The ability to choose the proper technique or tool for a given job is the mark of the professional and is part of the new set of skills you must develop as you become a teacher.

Research in occupational training indicates that individuals retain about:

10 percent of what they read

20 percent of what they hear

30 percent of what they see

50 percent of what the both hear and use

70 percent of what they say

90 percent of what they say and do

Though the above percentages are only approximations they do indicate that:

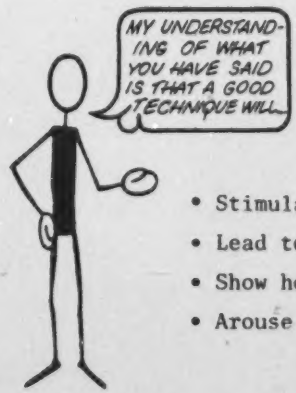
- Students learn faster by seeing and hearing than by hearing alone
- Students learn even faster when doing is added to seeing and hearing.
- Students tend to remember more of the things they do than of the things they are told

Thus by carefully considering your objectives and the nature of the material you plan to cover, you can select the most efficient technique or combination of techniques for each lesson. It is just as good a method to identify wood samples by taste as it is to taste a special sauce in the kitchen. However, it may not be appropriate to try and determine the base of a cutting oil the same way. You, as the instructor, must be the judge.

Right you are! Some can be used in many different situations but are more appropriate for only a few. Also, the more tools of the teaching trade you can use, the easier it will be for you to meet your objectives and the more likely it will be that you will do a better job of teaching.

If you can get your students to read more on a topic or to practice a skill on their own, you did a good job. If your students discuss the lesson topics with each other after class, you did a better job. If your students also include you in their discussions, then, you did an outstanding job.

Summary



- Stimulate thought
- Lead to discussion
- Show how...
- Arouse continuing interest

UNIT 4

MORE HOW

Some things are hard to describe using just words. In such a situation, a teaching aid is used to make it easier for the students to understand a difficult bit of information or see the operation of a complex process. An instructional aid is something that helps you do your job, not that replaces you as an instructor. Some common instructional aids include:

- Textbooks, reference books, and other publications
- Chalkboard
- Films, slides, and filmstrips
- Charts
- Overhead transparencies
- Field Trips
- Television
- Sound or tape recordings
- Specific objects such as samples or models
- Handouts
- Student notes
- Mockups

Instructional aids are used to:

- Show something very small or a hidden detail
- Show something too large to bring into class
- Simplify a complex device
- Show relationship of parts
- Demonstrate a motion cycle or sequence of events
- Compare new information with old

Instructional aids are classified as:

- Display aids such as;
  - Chalkboards
  - Pads of paper
  - Posters
  - Cartoons
  - Flipcharts
  - Wall charts
- Projected aids such as;
  - Films
  - Slides
  - Filmstrips
  - Opaque projecturals
  - Overhead transparencies
- Three-dimensional aids such as;
  - Actual objects
  - Models
  - Mockups
  - Pieces and parts
- Duplicated or printed aids such as;
  - Handouts
  - Job sheets
  - Prepared notes
  - Reading lists

When selecting or making an instructional aid, remember that it should:

- Explain an abstract idea, show a relationship, or present a sequence or procedure that is not clear without it
- Be large enough so everyone can see it
- Be brief and easily understood
- Make good use of color to emphasize main points
- Show proper relationships unless distortion is deliberate for emphasis and is so explained
- Be constructed of good materials, if it will be used again
- Show good design and workmanship
- Be portable, if it will be moved from place to place
- Be protected with paint, shellac, glass, or plastic, if it will be used more than once

Here are a few suggestions that relate to the use of instructional aids:

Before the start of class:

- Know exactly what it is that you want to accomplish with each aid you use
- Preview all aids and see that they are going to be appropriate (You may decide to show only part of a film.)
- Rehearse the use of the aid or the projection equipment needed
- Have everything ready so time will not be wasted looking for something that is needed (Have a spare projection bulb)
- Arrange the room for best viewing
- Place complicated drawings on the chalkboard before session starts
- Cover or hide display items until you are ready to use them so they will not distract the students

During the class session:

- Use the aid, don't just show it; but don't let it become your substitute
- Show each aid at the proper time
- Speak to the class, not to the instructional aid
- Pass models or illustrations around *after* the discussion takes place
- Explain clearly, before the showing of any projected aid, just what the students are to look for
- Reshow any projected aid, if it is necessary to clarify a point that was missed

For most major occupational areas, there is a large and readily available supply of instructional aids. Consider such sources as:

- Local school authorities
- Local establishments and employees

- Manufacturers of equipment
- Supply houses
- Governmental agencies

Now, let's try a case study. The problem is to provide your students with:

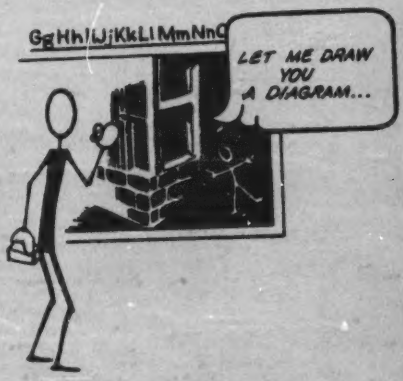
- A mass of well-organized material
- A permanent source of new material or review material
- A portable reference
- Current information

Which instructional aid would you use?

Yes, a book is right, but consider the whole family of textbooks, reference books, and other publications.

Now, what would you use if you wish to:

- Emphasize a few key words
- Show relationships
- Reinforce written or spoken words



Don't get corny; I get the picture. Yes, the aid to use in this case is the chalkboard. Material placed on the chalkboard should be simple and brief. Below are listed a few suggestions which should increase your effectiveness when you use the chalkboard.

- Be brief and concise.
  A few important points, well-spaced, are more impressive than an overcrowded chalkboard
- Keep the material simple

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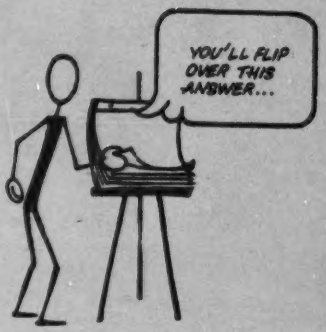
- Have everything ready (chalk, rule, and eraser) before the class meets. Check lighting and avoid glare on the chalkboard
- Use color for emphasis
- Print or write large enough so it can be easily seen from the back of the room
- Erase all unrelated material. Keep the chalkboard clean

To add further to our problem, consider the necessity of reviewing a specific bit of information. The material you place on the chalkboard is erased. The students can't go back and review it later. Which aid would permit you to:

- Provide permanent copies for review?
- Provide a lasting reminder of safety hazards or other rules?
- Use a diagram over again into which you have put a lot of effort?



A bad pun but a good choice
A flipchart or any other kind of chart would do the job.

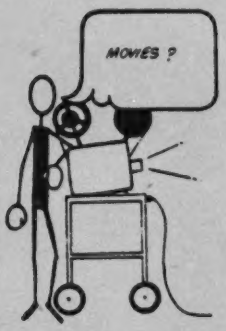
OK, now add to our situation the problem of a large group. How is everyone going to see your diagram? Also you wish to show how parts of a drawing fit together.

Good show; right on! The fitting together of parts or other interrelatedness can be shown by the use of overlays or different colored film which can be added to your transparencies. Incidentally, there are companies that produce complete sets of transparencies for use with many courses. If you make your own,

(contact your local AV specialist for details), observe the copyright laws. Many materials require permission from the publishers before they can be copied.

An often neglected machine that doesn't require copies yet can project printed materials in many forms is the opaque projector. It is big and bulky and its image isn't always as bright as you might like but it still is a handy machine.

Let's add a further dimension of sequence. Suppose you want to show:



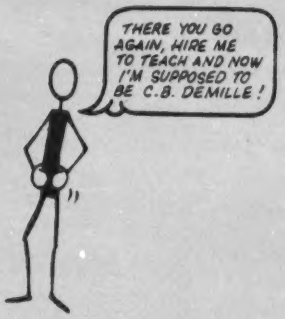
- A sequence of events
- A small object
- A process that is complicated or too slow or fast to be seen in real life
- Material that can be projected at a later time for review
- A common experience for the entire class

Well, movies plus slides, filmstrips, single concept loops, and the whole family of similar aids.

What would you do if you wished to give your class an experience that includes all the sights, sounds, and smells of an actual work situation?

No I'm not kidding; think big. Wasn't there something once said about mountains and Muhammad? Obviously, you can't bring all of this into your classroom so you take your classroom to the actual site or you arrange for a field trip. You plan just as you would for any lesson only you go someplace else for the instruction.

Try TV. With a portable video camera and tape recorder you can send a person (or go yourself because you know exactly what you want to see) and bring back a video tape that would include most everything except "smell." If this is still not practical, try sound tapes or records. In some instances these can be purchased. Examples would be the dictation or transcription recordings used to increase the speed of typists or stenographers to the levels necessary for a job. Other items may have to be revised to suit your objectives while in some other situations the best thing to do is to make your own.



If you wish, you can make it into a major production, but you really don't have to. A simple production that is to the point is what you need. When things become too fancy, you become reluctant to stop using them even though they really have outlived their effectiveness.

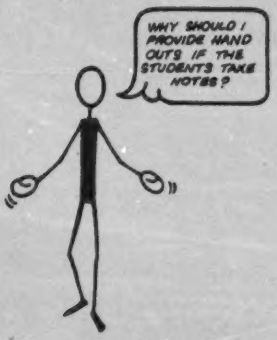
Other devices to consider are actual objects, samples, or models. You can determine when they would be appropriate for your needs. Obviously, the best way to provide a description of a thing is to actually show it, or a facsimile. Can you imagine how much more difficult it would be to describe an elephant with only words than to show a real one or at least a model or picture of one?

A very commonly used instructional aid is the handout. Almost every teacher at some time in their career feels the necessity of preparing a sheet to be duplicated and distributed. These sheets may:

- Provide instructions, explanations, or diagrams

- Contain information necessary to complete a job or practice session
- Preview the procedures required to complete a specific task
- Give information required for later review
- Give an assignment

Sometimes the sheets are returned to the instructor so that they may be used with future classes. Other times they are kept by the students in the form of a notebook. This notebook may be graded by the instructor, simply checked for completeness, or left to the care and maintenance of the students. In dealing with adults, experience has indicated that if they are really interested in your class they will keep an excellent notebook without the need for your inspection.



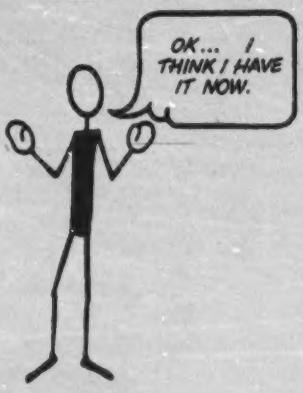
Very few people can do more than one thing at a time. If they are writing, they are not listening. If they are listening or watching, they are not likely to be taking good notes. If the information is important enough to be written down and saved, you, the instructor, should have it prepared and duplicated so it can be given out *after* your presentation, unless of course it is to be referred to during the lesson. If you give out material too soon, students usually will end up reading it and not participating in the class.

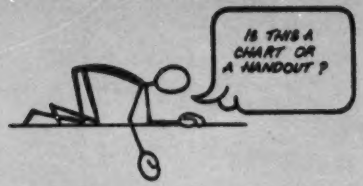
Any good reference on the use of instructional aids will fill in many of the gaps left here. If you can't locate something that suits your needs, the local AV people can give you a few simple tips on how to get started. Also, most schools have someone who can show you how to operate the various machines and devices you may wish to use. The effectiveness of various teaching aids are indicated in the chart found on page 41.

Summary

When you plan to use an instructional aid:

- Plan far enough ahead so you have all materials when you need them
- Practice and/or preview each aid before class so you will be effective because of your increased ability to perform
- Prepare an introduction so students know why they are experiencing what you have planned
- Prepare and announce in advance your intention to use a followup or an evaluation of the aid





EFFECTIVENESS OF INSTRUCTIONAL AIDS†

INSTRUCTIONAL AIDS	VALUE FOR TEACHING					
	Facts	Visual Identifications	Concepts and Rules	Learning Procedures	Motor	Attitudes
Still pictures	Medium	High	Medium	Medium	Low	Low
Motion pictures	Medium	High	High	High	Medium	Medium
Television	Medium	Medium	High	Medium	Low	Medium
Mockups, models	Low	High	Low	Low	Low	Low
Audio recordings	Medium	Low	Low	Medium	Low	Medium
Programmed instructions	Medium	Medium	Medium	High	Low	Medium
Demonstrations	Low	Medium	Low	High	Medium	Medium
Text and reference books	Medium	Low	Medium	Medium	Low	Medium

†Adapted from W.H. Allen, *"Media stimulus and types of learning."* Audiovisual Instruction. Vol. 12, No. 1:28. Jan. 1967.

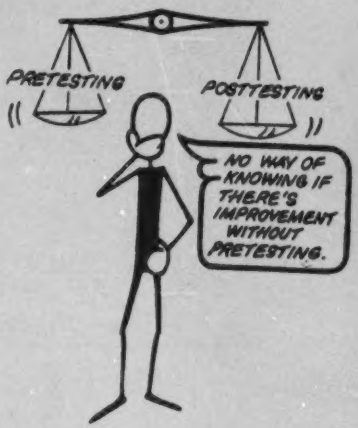
UNIT 5

QUALITY CONTROL

Periodically, you need to take a look at your product (the change in your students' ability to perform specific skills), and the process you used to develop that product (your instructional techniques), to see if things are going as planned.

As an adult occupational instructor preparing students for employment, you need to know if they are developing the required skills and acquiring the necessary knowledge, and if they can meet the trade standards. To do this will require some form of testing.

When you test or measure the experiences that your students bring to class, you are pre-testing. When you measure the change that exists after a lesson, you are posttesting. But, to determine the degree of improvement in your students, you must do both.



Hopefully, all the positive changes will be the result of your teaching, and any negative effects (bad habits) will be the result of outside influences over which you had no control. Many times instructors assume that new students know very little about a given topic, and, therefore, any amount of skill indicated by a posttest is claimed as a result of their teaching. This is an assumption that may or may not be valid.

When you test or evaluate the students you also are checking on the effectiveness of your teaching. The objectives of your lessons will state that the students can do something as a result of that lesson. The discussion on writing of objectives comes in Unit 7. You also will give the conditions under which the students are to function and the standards that will be used to determine if they, in fact, can perform. Now, the stage is set for checking or evaluating.

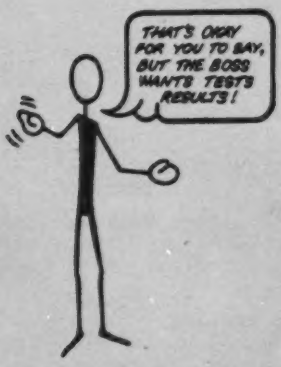
Weak points in your plans may show up as poor test results on the part of the students. Maybe you chose the wrong technique or teaching method. Maybe you left out a small, but important, step or fact that would have been the key to the student's understanding or performance.

When you give a test, it is a good idea to let the class know that you, as an instructor, are being checked or evaluated as much as they are. It is important to explain this aspect of testing to adults because many of them only remember tests in school as a form of punishment.

Did you ever have a teacher, out of sheer frustration, say, "You people had better behave or I'll give this class such a hard test that no one will pass!!!"

Hopefully, your experience in such a situation will prevent you from doing the same thing to your class. Remember, a test is used to find out if you are getting through to the students. You need to know if the methods that worked with other classes are working with this one. Just because you are teaching doesn't mean that the students are learning.

Another good practice is to correct the test (show where the errors are and indicate more appropriate responses) but don't grade them. In other words, do not put a value grade on them. Let the adults determine the worth of their own efforts. In fact, if you can, let them set their own goals and measure their own successes.



OK, so give him tests results. Tests commonly used in adult occupational education come from two main families; they deal with opinions or they deal with facts.

If you ask the members of a class to give you an essay on how they think collective bargaining will be conducted twenty years from now, you will be hard pressed to say who has the correct answer and who doesn't. Maybe you could show flaws in their logic but unless you have a crystal ball your guess is no better than theirs as to which answer is a true indication of the future.

Thus, it is better to use tests that deal with facts and can be marked right or wrong, time after time, regardless of who grades them. This type of testing is done by:

- Oral quizzes - for review or pretesting
- Short written quizzes - for review or posttesting
- Longer written tests - for summary of large segments of material
- Observations - for evaluation of such things as work methods or attitudes
- Evaluation of a project - to see if a student can put it all together.
- Performance tests - for detailed or involved evaluation of skill mastery

Reference books on tests and measurement may have different names for these types of tests plus many more examples of other testing devices and instruments or techniques. Don't let the names become the central issue. What you should be interested in is the variety of tools that are available to you, the conditions under which they work best, and how to use them.

Maybe it sounds that way, but really it isn't. First, you must know exactly what it is you intend to teach and the results you hope to achieve. Second, you must know how important the material you select for testing is, in relation to the overall course objectives. It was pointed out earlier that the specific objectives of each lesson set the stage for the evaluation. We are now adding the additional dimension of the value or importance of the parts to the whole.

This will give you some idea of how many questions of equal value to use for each topic or how much weight to place on each question when different values are used for each question. Obviously, the more important the material, the greater the number of points out of the possible total you would plan to devote to it.

Easy, develop a set of plans or specifications when you make a test. Obviously, you can't test everything that was presented so you must select a portion of the total to include on the test. Now, determine how much emphasis you wish to place on each portion selected. To help you do this, you can actually develop a chart such as the following:

Items Relative to Specific Objectives	Type of Questions				Total Test
	Recall	Comprehension	Application	Analysis	
1. Vocabulary	8%	6%	10%	-	24%
2. Principles	4%	8%	15%	5%	32%
3. Disassembly	6%	3%	8%	2%	19%
4. Repair	5%	5%	5%	10%	25%
TOTAL	23%	22%	38%	17%	100%

Right, but now let's see how it works. For example, an instructor selected four different types of questions to use in the test (shown across the top of the chart). An objective of the first lesson was to develop the students' vocabulary and terms used at work. The instructor next decided that this portion should make up 24 percent of the total test (see last column). In other words, *if 100 one-point* questions were used, 24 of them should be on vocabulary.

Now, this 24 percent was broken down as to type of question to use. The instructor decided that 8 percent of the questions should be devoted to simple recall of the words, 6 percent should deal with the comprehension of their meanings, and 10 percent should determine if the students could properly apply them (see first line of chart).

The other items (see left side of chart) for the rest of the test were developed in the same way. Making or constructing a test in this manner helps you to keep the various portions of the test in proper balance, one with another.

After you have developed the specifications for a test, look into your bag of measuring devices and select the ones that best measure whatever it is that you want to test.

In your "bag" you should find both oral and written tests. Preparing an oral test requires the same attention to detail as does a written test. In each case, you need to determine, in advance, what the possible range of correct answers will be for each question. Then, you will know how to react to what you hear or see.

Most tests are paper and pencil or written, and are composed of one or more of the following types of questions:

- Essay
- Completion
- Multiple choice
- Matching
- True-false

A discussion on the merits of each type of these questions follows.

ESSAY QUESTIONS

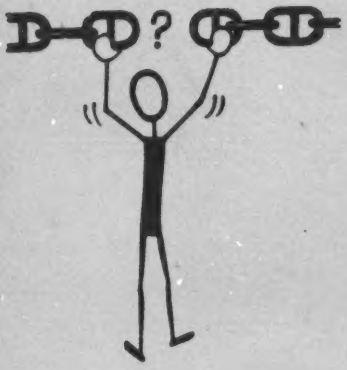
A good essay question asks students to develop an answer from their own knowledge and experience and to express that answer in their own words. This measures the students' ability to present evidence, evaluate it, analyze it, and solve new problems, or approach old problems in a new way. When using essay questions, serious thought must be given to designing some way of marking them so that, no matter who uses them, the score will be about the same. When using essay questions, it is difficult to test a wide variety of materials because they take so much time to write. Therefore, not too many essay questions can be used on a test before it becomes a big job just to answer and grade it.

Short answer-type questions are as effective for most needs as the essay-type questions. Some questions require students to recall or supply an answer (completions, true-false), while other types require students to recognize or select an answer from among those supplied (multiple-choice, matching). When using any type of short answer questions, be sure that:

- Questions are phrased so that one trival word doesn't become the key to the whole question
- There are no confusing statements or trick questions included
- Questions are clear and concise and not cluttered with unrelated facts
- Answers to questions are not found in or depend upon previous answers
- All statements use correct grammar and are in a style understood by the students
- Questions determine what the students know, not what they don't know
- The format or physical arrangement of all questions is the same throughout the test

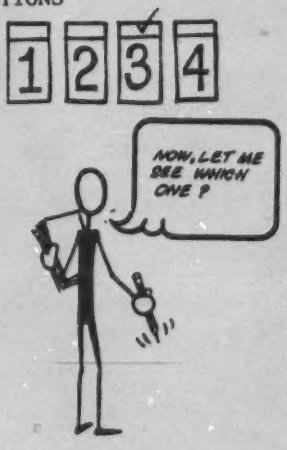
- The number of possible choices, when this type of question is used, are at least four, with all the choices seeming to be reasonable

COMPLETION QUESTIONS



Completion questions require students to finish a statement or drawing, and this type represents a compromise between the recall of an essay and the 50-50 chance of a good guess provided by the true-false question. You will be surprised by the variety of correct answers that you can get for questions that you are certain have only one answer. Practically speaking, only tasks that require simple calculations or verbal associations should be tested with a completion question. The search for such questions too often will cause you to concentrate on details and, therefore, limit the use of this type of question to the testing of bits of information and specific facts.

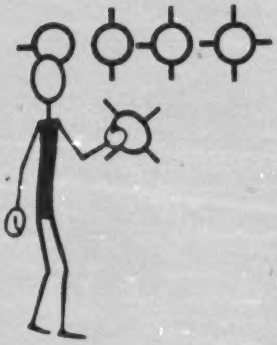
MULTIPLE CHOICE QUESTIONS



Multiple choice items consist of an introductory sentence or an incomplete statement and four or more suggested answers. The object is to have students choose the most nearly correct or best response. In this way, you avoid the requirement of an answer being absolutely true under all circumstances or the opportunity for the student to introduce different replies than the ones you are expecting. The guessing factor is considerably reduced with this type of questioning, especially if four or five responses are provided. In a 10-item, four response, multiple-choice test, the probability of obtaining a score of 70 percent on the basis of chance alone is about 1 in 1,000. For a 25-item test,

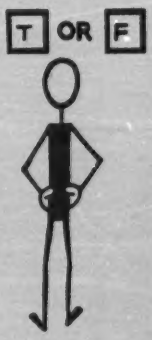
the chance is reduced to about 1 in 1,000,000. When this is coupled with a large sample of content, the multiple choice format makes a very useful type of test for adult occupational education.

MATCHING QUESTIONS



Matching questions usually consist of a list of questions with a longer list of answers. The object is to choose an answer for each question. There are always more answers than questions so that the last response isn't a giveaway. This form of test requires relatively little reading time on the part of the student. When compared with other forms of questions, a lot of material can be covered with this type. The guessing factor is small and the scoring is simple and objective. While the matching item has some flexibility in that you can have just about anything in the question column which is to be matched by things in the answer column, you can't always break your material down into "lists."

TRUE-FALSE QUESTIONS



The true-false questions consist of statements to be judged true or false or answered yes or no. A large number of items can be answered and scored in a short period of time, so a wide sampling of material is possible. When a key is used, there is no difference of opinion as to the correct answer (assuming, of course, that everyone agrees that the key is correct).

True-false questions are also useful to test bits of information and specific facts. A problem with this type of question is that there are very few absolutely true or false statements that can be made in this world. Many important outcomes of instruction are generalizations, explanations, evaluations, and inferences and, therefore, do not lend themselves to true-false items.

This type of question has to be very carefully written in order that it will not be misinterpreted by the students.

Another factor to consider when using true-false questions is guessing. Without even reading the questions, the student has a 50 percent chance of getting the right answer. In a 10-item, true-false test, the chance of answering 70% of the items correctly on the basis of chance alone are about 1 in 6. As the number of items is increased, the guessing factor is progressively reduced.

Effectively written tests are usually a combination of the different types of questions discussed above. A carpenter can measure the length of a board with a variety of measuring devices, but there is one device that will do the job better than the others. So it is with test questions; one type of question will measure a specific kind of information better than another. Thus, make your test a careful mix of different types of questions designed to measure various kinds of information.

There are other ways to evaluate students such as:

- Observations
- Practical projects
- Performance tests

A discussion of each of these rating devices follows.

OBSERVATIONS

Observations are more than keeping your eyes open for problems or outstanding jobs. They are as organized as any other form of testing and are usually accomplished by a checklist. If you are going to observe someone and rate a trait like an attitude, you had better be ready to treat everyone the same and measure each with the same standard. An example of such a rating sheet is given on page 51.

PERSONAL CHARACTERISTICS

WORK HABITS	IGNORES DIRECTIONS	FOLLOWS SOME DIRECTIONS, WORKS INEFFICIENTLY	FOLLOWS DIRECTIONS AND WORKS SATISFACTORILY	STEADY CONSCIENTIOUS WORKER	VERY ACCURATE RESOURCEFUL AND EFFICIENT
SAFETY HABITS	SLOPPY AND HAZARDOUS	FAIR, NEEDS IMPROVEMENT	GENERALLY WORKS SAFELY	MEETS REQUIRED SAFETY STANDARDS	NEAT, CONSCIENTIOUS AND CAREFUL
WORK AREA NEATNESS	VERY SLOPPY AND INCONSIDERATE	FORGETFUL AND UNCONSCIENTIOUS	ADEQUATE	THOROUGH	PRIDE IN OVERALL APPEARANCE OF FACILITIES
WORK AREA ATTENDANCE	OFTEN NOT IN WORK AREA	MAKES EXCUSES TO LEAVE WORK AREA	GENERALLY IN WORK AREA	SELDOM LEAVES WORK AREA	ALWAYS WHERE ASSIGNED
SELF-ESTEEM	NO SELF-CONFIDENCE	INSECURE, SELF-CONSCIOUS DEFENSIVE	BALANCED ATTITUDE	POSITIVE SELF-EVALUATION	SELF-CONFIDENT AND SECURE
INTEGRITY	NOT TRUSTWORTHY	ERRATIC	SINCERE	RELIABLE AND DEPENDABLE	EXCEPTIONALLY TRUSTWORTHY
RESPONSIBILITY	UNRELIABLE	SOMETIMES RELIABLE	USUALLY RELIABLE	CONSCIENTIOUS	ASSUMES RESPONSIBILITY VERY WELL
MOTIVATION	APATHETIC	SPORATICALLY MOTIVATED	GENERALLY MOTIVATED	INTERESTED IN EXCELLING	HIGHLY INVOLVED AND MOTIVATED
INITIATIVE	REQUIRES CONSTANT PRESSURE	NEEDS OCCASIONAL PRODDING	DOES ASSIGNED WORK	OCCASIONALLY SEEKS EXTRA WORK	SEEKS AND RECOGNIZES WORK TO BE DONE
EFFORT	"QUITTER"	APPLIES MINIMAL EFFORT	SHOWS SATISFACTORY EFFORT	SHOWS STRONG DETERMINATION	DETERMINED, PERSEVERING AND DILIGENT
PEER RELATIONS	UNCOOPERATIVE	SOMETIMES HARD TO WORK WITH	GENERALLY COOPERATIVE	WORKS VERY WELL WITH OTHERS	OUTGOING, WARM AND COOPERATIVE
LEADERSHIP	UNABLE TO LEAD	TENDS TO FOLLOW	SHOWS LEADERSHIP WHEN REQUESTED	VOLUNTARILY DISPLAYS LEADERSHIP	"MAKES THINGS GO"
REACTION TO AUTHORITY	HOSTILE	INDIFFERENT	ACCEPTING	GENERALLY COOPERATIVE	EXCEPTIONALLY COOPERATIVE

INSTRUCTOR'S COMMENTS _____

INSTRUCTOR'S SIGNITURE

PROJECT

By careful planning, it is possible to select a project that will evaluate just about every skill you are trying to teach. If each lesson deals with some phase or part of this project, when it is all put together you have a complete record of everything you have taught. This, of course, is nothing that you can develop overnight but it is something you can shoot for over several years. Such a project would be easy for an instructor of machine design. In the beginning of the year, the instructor can start with the simple parts of a machine, and by the end of the year the students are well on their way to having completed an entire assembly. If you were an instructor of foods, at the last class, you could pull out of the freezer all the parts for a banquet. What an ending that would be for that course!

PERFORMANCE

The last type of test to consider is a performance test. In its true form, a performance test is a one-to-one situation where the instructor carefully evaluates a single student as a task or a series of tasks is accomplished. It is an excellent way of finding out exactly what a student can do but is very time consuming when applied to a class of twenty students.

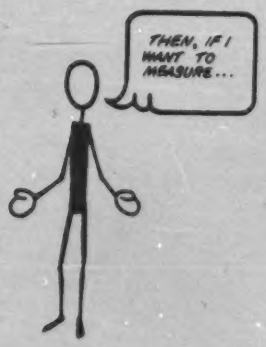
A performance test needs to be carefully planned and given. When preparing a performance test be sure to:

- Determine exactly what elements you wish to test including safety factors and precautions, speed, accuracy, ability to follow directions, and skill and craftsmanship.
- List the operations and/or steps
- Establish acceptable standards for each element being tested as well as the relative value of each element.

- Prepare directions, preferably written
- Develop a scoring sheet which will provide a standardized guide when observing and evaluating students.
- List and have available all materials, tools, and equipment needed to perform the test.

In general, any test that you develop and/or use should be:

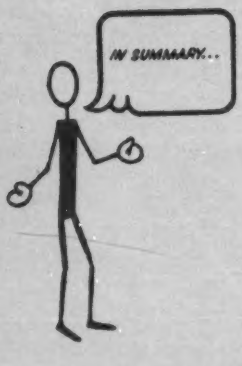
- Valid, or measure what it is supposed to measure. Don't ask the type of questions that tests a student's ability to read and write if what you are really trying to test is a skill.
- Reliable, or consistently give the same results, no matter who gives or scores it. This has to do with objectivity if you wish to study this topic further.
- Usable in your situation. A test may be excellent, but if it takes too long to give or is impossible to score with the measuring devices that you have available, then it is not usable. Also, it may be too expensive because it requires a special machine or testing service to score it. Here again, your professional growth and success depend upon your being able to make decisions, this time about which test will do best what you want done.



- Understandings - I use - short answer, multiple choice, or essay questions
- Manipulation - I use - observation guides, rating scales, or score cards
- Observation - I use - reports, interviews, or individual study projects
- Student growth - I use - questionnaries, checklists, or personal rating scales

Right, this should get you started but it is in no way a substitute for a complete course in tests and measurements. Valuable suggestions on developing test questions may be found in the booklets, *Improving the Classroom Test* or *Measuring Instructional Intent* listed in the Bibliography.

Summary



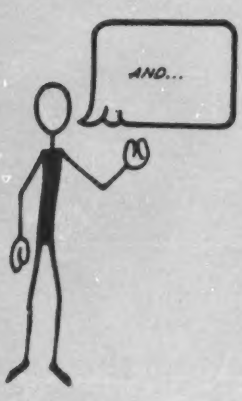
Tests are used to:

- Evaluate the achievement of the students
- Measure the effectiveness of the instructor's teaching
- Locate errors and weaknesses that need correction

To construct a good test, start with the end results that are desired and then design questions or projects that will measure the student's ability to perform, using the stated objectives of the lesson, unit, or course as the standard.

A good test should:

- Measure accurately the knowledge acquired or skills developed by the students
- Have questions and directions that are clear, concise, and complete
- Be easy to give, take, correct, and score
- Use questions that are valued fairly and accurately



Tests given at the end of each lesson or unit assist the instructor to determine that the:

- Sequence of the lessons was effective
- Lesson plans did provide adequate treatment of the subject and what items, if any, need to be retaught
- Instructional aids did contribute to the overall content or needed to be different
- Teaching methods were effective and appropriate for the materials presented

- Areas of student's strengths and weaknesses, if any, were properly identified

In order for the skilled person to become a competent teacher he or she needs to be able to:

- Prepare teachable lessons following accepted methods of learning
- Present the required knowledge, skills, and attitudes
- Develop students who will be able to perform at job standards and who at the same time, are self-evaluating, self-improving, and self-motivating workers
- Become a self-improving, self-motivating, and self-evaluating individual

Speaking of a self-evaluating individual, it would be a good idea for you, on your own, to take a look at what you are doing rather than waiting for a formal evaluation by your supervisor. Obtain a rating device and check the way you are teaching. The checklists on pages 56 to 58 are offered as a help until you are experienced enough to develop your own device. Be honest and try to correct any problems you identify before the one with the "black hat" does it for you.

Supervisors aren't really villains, but they do have to evaluate you to determine if they made a good choice when they hired you, and if they should ask you back for another year. If you can smooth out any rough spots before he or she comes around, so much the better.

Your students are going to rate you whether or not you ask them to do so. Some experienced teachers have developed evaluative devices which they share with their students. The results can be revealing. New teachers may not be ready to go through such an ordeal, so think about it before you try it. The checklist on page 59 is offered as an example of a rating device that you may wish to use with the students.

INSTRUCTOR SELF-EVALUATION CHECKLIST			
Directions:	Place a check in the appropriate column that best describes your actions for each item. Areas in need of improvement will be identified by the checks found in the first two columns. Develop a plan of action to upgrade these items.		
KNOWLEDGE OF SUBJECT	Bluffs	Superficial	Thorough
PLANS FOR PRESENTATIONS	Seldom	10 min. before class	Well prepared
SPEECH PATTERNS	Mumbles	First few rows can hear	Speaks clearly
USE OF TERMINOLOGY	Doesn't know terms	Doesn't explain terms	Teaches vocabulary
SYMPATHY AND PATIENCE	Short tempered	Puts up with students	Really cares about students
TACT AND DIPLOMACY	Abrupt and abrasive	Can be lived with	Congenial
DISCIPLINE	A pushover	Inconsistent	Firm but fair
COMPLIMENTS STUDENTS	Seldom	Occasionally	Whenever earned
CORRECTS STUDENTS	Gruffly	Coldly	Tactfully
QUITS TALKING	Once in a while	Can be interrupted	Knows when to stop and listen
ENCOURAGE QUESTIONS	After I'm through	Can be interrupted	Teaches students to ask
EVALUATES STUDENTS	As punishment	Because required	To measure progress
COOPERATE WITH OTHERS	If made to	As required	Seeks ways willingly

SELF-ANALYSIS FOR THE INSTRUCTOR

Directions: Indicate your answer to each question below by placing a check (✓) in the appropriate column. Areas in need of improvement will be identified by checks found in the *Sometimes* and *No* columns. Develop a plan of action to upgrade these items.

	YES	SOMETIMES	NO
1. Do I utilize the suggested course of study?	___	___	___
2. Do I have an advisory committee organized and functioning?	___	___	___
3. Do I give careful attention to the facilities, equipment, and physical condition of the classroom?	___	___	___
4. Do I seek assistance in planning and implementing the course?	___	___	___
5. Do I keep my course outline up-to-date?	___	___	___
6. Do I make allowances within the course outline to cope with the individual differences?	___	___	___
7. Do I modify the course to meet student needs, after the first meeting?	___	___	___
8. Do I prepare lesson plans?	___	___	___
9. Do I develop skills within the class which can be used directly on the job?	___	___	___
10. Do I use instructional methods and techniques that are appropriate for the presentation?	___	___	___
11. Do I give each student the attention he or she needs?	___	___	___
12. Do I evaluate my lessons for the:			
a. Appropriateness of the objectives?	___	___	___
b. Appropriateness of the teaching methods?	___	___	___

	YES	SOMETIMES	NO
c. Utilization of teaching aids?	___	___	___
d. Organization of the subject matter?	___	___	___
e. Use made of the class time?	___	___	___
f. Consideration of individual differences?	___	___	___
g. Amount of student participation?	___	___	___
h. Depth of my knowledge of the subject matter?	___	___	___
13. Do I periodically assess student progress?	___	___	___
14. Do I encourage students to experiment with their own ideas?	___	___	___
15. Do my students know ways of measuring their own progress?	___	___	___
16. Do I motivate my students to engage in related outside activities?	___	___	___
17. Do I use community resources effectively?	___	___	___
18. Does the attendance record reflect a high level of student interest?	___	___	___
19. Do I have good rapport with my students?	___	___	___
20. Do my students feel free to ask questions?	___	___	___
21. Do I maintain a strong relationship with the administration, teaching staff, and other school employees?	___	___	___
22. Do I provide an effective interpretation of the training program for students, school employees, and potential students?	___	___	___

INSTRUCTOR CHECKLIST

Directions: For each item listed, place a check in the appropriate column that best describes, in your opinion, the instructor. Be honest but not vindictive.

	Items	Satisfactory	Needs Improving
1.	Knows subject throughly	____	____
2.	Gives presentations that are well organized	____	____
3.	Presents occupationally oriented materials	____	____
4.	Speaks clearly	____	____
5.	Explains the language of the trade	____	____
6.	Shows concern and patience for students	____	____
7.	Uses tact and diplomacy when dealing with students	____	____
8.	Exercises proper control over learning activities	____	____
9.	Praises good work and accomplishments	____	____
10.	Corrects students mistakes tactfully	____	____
11.	Encourages students' to ask questions and to participate in lessons and demonstrations	____	____
12.	Uses a variety of teaching methods	____	____
13.	Gives clear and concise explanations and demonstrations	____	____
14.	Maintains a neat and orderly classroom and/or shop	____	____
15.	Shows a concern for the safety of the students and equipment	____	____
16.	Keeps tools and equipment in good operating condition	____	____
17.	Maintains adequate supplies on hand	____	____

UNIT 6

WHAT

For most occupations there are numerous textbooks, guides, and similar references that are readily available, and that may be used as sources for content from commercial publishers, governmental agencies, and trade organizations.

Not so fast! It isn't that easy, because the authors of these books are not able to determine exactly what your students need to know. In a way, what you teach is a product, with the students being the customers. Unless you teach what the customer wants, you have a "No Sale" situation.

As you plan your course, keep in mind that you are trying to add to the learners' skills and knowledge rather than simply reinforce what they already know. Never go into a class cold, and bluff your way through. If you do, the session will be a disaster. The students have paid hard-earned dollars for the chance to learn something and they are not going to be happy with you if you took a job for which you are not prepared. Thus, any plan is better than no plan.

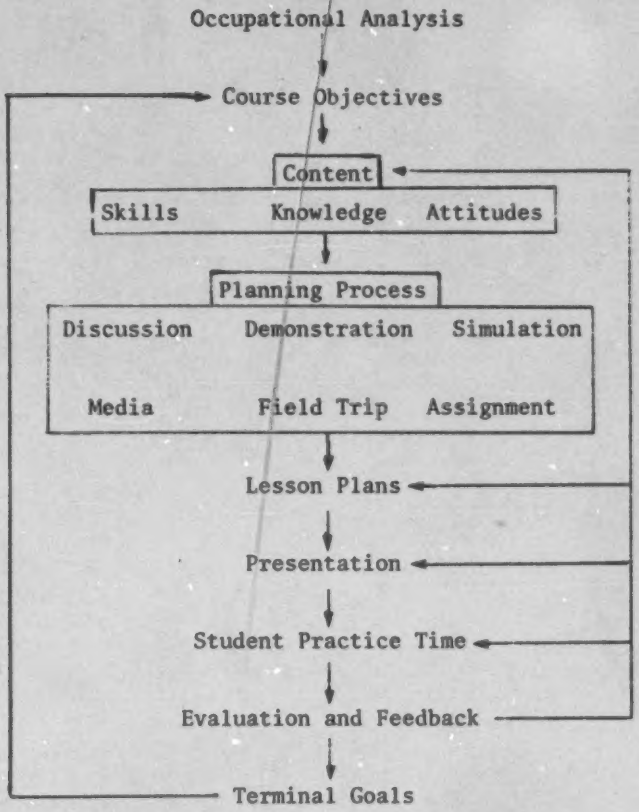
Undoubtedly, you have had the experience of putting together a product that you purchased unassembled. As you struggled to follow the assembly instructions, you became aware of the importance of understanding the terms they were using. So it is with teaching; it is necessary that you understand the language.

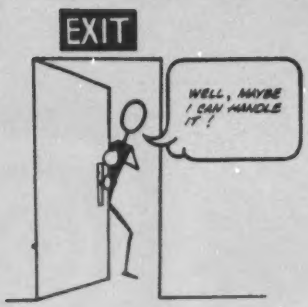
Education, like all trades, has its own jargon or terminology, with some items having more than one meaning. Not everyone will agree with the following definitions, but, for the sake of our understanding each other, let us accept that:

- A program is made up of several courses for one field of study.
- A course is a number of lessons that lead to a predetermined goal which may be taught over a given period of time, such as one term or one year.
- A course of study is a written description of the course.
- A course outline is a sequential listing, in a condensed form, of the main ideas with supporting details that are to be included in a specific course.
- A lesson is a specific amount of content that is presented at one class session.
- A lesson plan is a teaching outline of the important points arranged in the order in which they are to be presented along with a listing of the instructional aids needed to make the presentation.

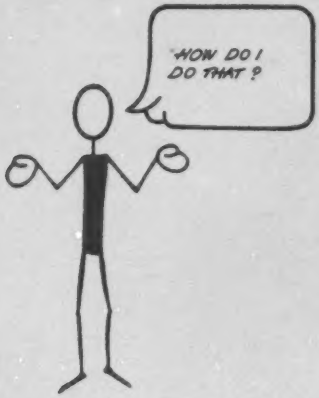
Hold on! Help is available. The chart on page 62 shows the process to use to develop a course of study. One of your initial tasks is to determine the employment needs of your students. Do this by obtaining or making an occupational analysis to find out what the tradesperson does and needs to know. Determine also the skills, knowledge, and attitudes that employers want their entry-level workers to have. In some cases, you may be requested to offer a course to upgrade the skills of individuals already employed, or develop the skills required by a new process. The procedures are the same but the scope is narrowed. In other words, the analysis should include only that portion of the trade that is needed by the students.

DEVELOPMENT OF A COURSE OF STUDY





Sure you can! You were hired because you are an expert in your field. You aren't expected to know it all, but you are expected to know where to find answers. Ask your director or curriculum coordinator for help in locating an occupational analysis for your trade. Organizations related to your trade, including employer as well as employee, may have such an analysis. These materials have been prepared by others and may be used as is or changed to suit your needs.



Well, this is an excellent opportunity to seek help from an advisory committee. If your subject area is rather common, such as auto mechanics or carpentry, there is most likely an advisory committee already formed and working with the educational planners of your school. Ask them to suggest new ideas or review and react to the things you develop.

If you are planning something unique, you may need to form a new advisory group. One word of caution, though. Don't form an advisory committee if you are not going to ask for their assistance. You may not always follow their suggestions, but at least get their opinions. The people you need on this committee are very busy because everyone else wants a piece of their time. In most cases the individuals you ask to serve on this advisory committee will be glad to help when they are needed, but they will resent simply being a name on a piece of paper.

Now you are ready to develop the objectives for the course. These objectives are based on the information gathered from the occupational analysis. State them in terms of what the students will be able to do as the result of your instruction.

Then, make a course outline of the content needed to provide the students with the skills, knowledge, and attitudes identified in the objectives. These topics should be arranged in a teaching sequence.

This is a good place to remind you that you do not have a captive audience. Most students come to adult occupational classes because they want a job, or need to learn new skills to hold or advance on the job they already have. They will continue coming to class as long as they are receiving what they need. They will work hard and want to do things that lead them toward their goals but will become upset with work that is not relevant. Thus, always select content for your course so that it reflects real job situations and is based on specific student needs.

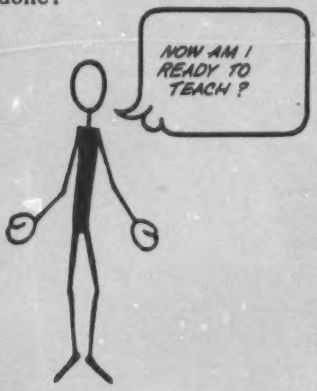
Next, use the objectives and content outline to develop a course of study. The actual arrangement or format you use is relatively unimportant just as long as each of the following items is included:

- Objectives — both general and specific should be stated in terms of what the students will be able to do as a result of the instruction.
- Content outline — main topics with supporting details arranged in a teaching sequence.
- Instructional suggestions — ways of presenting the content effectively and efficiently; consistent with the best way people learn that type of material.
- Student activities — experiences that help students develop the required skills, knowledge, and attitudes.
- Evaluative suggestions — activities that help assess the accomplishments and progress of each student relative to the stated objective.
- Instructional aids — various tools, materials, and teaching aids needed to implement the instruction.

As you develop your course, don't overlook your director or curriculum coordinator as sources of help. They will be glad to show you sample layouts of courses of study that have been used successfully by experienced teachers or indicate the format that has been adapted for use in your school system.

During the planning process, you are going to become aware of things that were left out or perhaps items that were put in which are not relevant to the student needs. It will take several revisions before you are ready to try out the course.

Also, each time you use the course you will find a need to make some changes. You should revise your course regularly because a course that isn't changed soon gets out of touch with our everchanging technology. Be sure you are teaching the way it is done on the job now, not the way it used to be done.

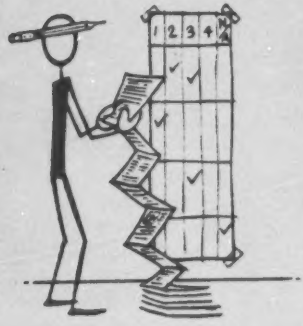


Not yet! First you should review and evaluate the course of study that you have prepared to see that it is accomplishing the desired results.

The value of any occupational course depends on how well the objectives reflect and meet student employment needs. The needs should be approved by outside authorities (your advisory committee) who are directly associated with the specific occupation.

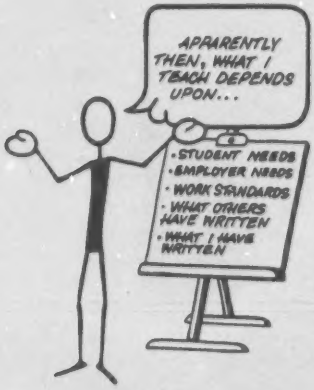
One way to evaluate your course of study would be to have individuals who were involved with you during the planning stages, such as your supervisor and director or members of the advisory committee, review it. You might also wish to rely on your own judgment and review it yourself. The major problem with this method is that you might be too easy on your own work.

Another solution might be to use a rating device. This method would be appropriate for anyone to use because the guidelines for evaluating a course of study would have been established prior to its use. Thus, hopefully, everyone would be using the device in the same way. The device also could be used to appraise materials developed by someone else that you might be considering to use in your situation.



Just to get you started, a copy of such a device for evaluating courses of study may be found, commencing on page 67. Read carefully the course of study that is being evaluated. Then, answer the questions listed on the rating device by placing a check mark in the appropriate column for each item. Courses of study that have many check marks in columns 1 and 2 may be useful and appropriate for your situation. Courses of study that have many check marks in columns 3 and 4 may be inappropriate for your use. When you use the device to appraise your own work, the check marks in columns 1 and 2 indicate strong points, where as check marks in columns 3 and 4 indicate places where the material is weak and needs to be revised or strengthened.

Summary


APPARENTLY THEN, WHAT I TEACH DEPENDS UPON...
• STUDENT NEEDS
• EMPLOYER NEEDS
• WORK STANDARDS
• WHAT OTHERS HAVE WRITTEN
• WHAT I HAVE WRITTEN

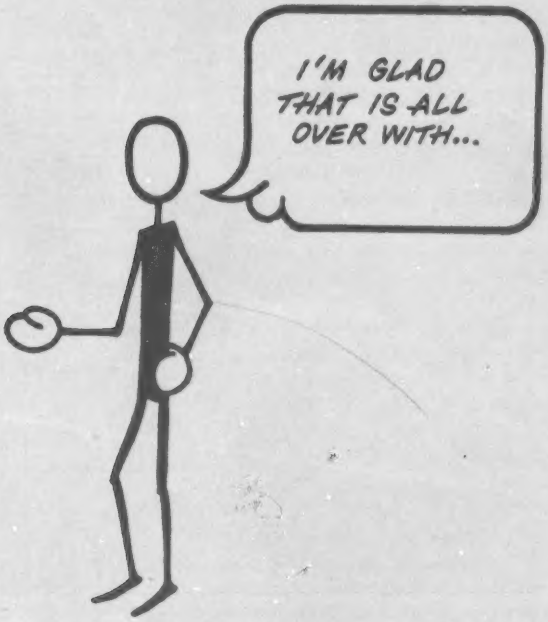
EVALUATION OF A COURSE OF STUDY

Directions: Place an x in the appropriate column for each item. Columns 1 through 4 represent a decreasing importance of the item to your situation. The last column indicates that the item does not apply to your situation.

	1	2	3	4	NA
• Are course objectives consistent with:					
. Objectives of the program?					
. Interests and abilities of the student?					
. Needs of employment?					
. Procedures followed by employers?					
. Facilities available?					
. Methodology?					
. Laws and regulations?					
• Do lesson objectives:					
. Clearly state expected changes?					
. Consider student attitudes?					
. Consider student traits?					
. Specify new knowledge?					
. Specify new skills?					
. Show linkages to previous material?					
. Indicate linkages to future material?					
. Provide for reinforcement of learning?					
. Relate to lesson evaluations?					
. Provide for individual differences?					
. Provide for motivation?					
. Consider time factors?					
. Provide for summary and review?					
• Is the course content:					
. Closely related to objectives?					
. Comprehensive?					
. Important?					
. Realistic?					
. Adjusted for in-school or on-the-job experience?					

	1	2	3	4	NA
. Appropriate for facilities available?					
. Adapted to needs of employers?					
. Correlated or integrated with other courses within the total curriculum?					
. Safe?					
. Arranged in natural units?					
. Include references for both instructor and student?					
. Arranged logically?					
. Arranged in order of learning difficulty?					
. Approved by the local advisory committee?					
• Do proposed student activities:					
. Closely relate to course objectives?					
. Motivate learning?					
. Reflect real jobs rather than busy work?					
. Provide practice sessions?					
. Follow standard school practices?					
. Relate to available facilities?					
. Provide for individual differences?					
. Involve intellectual effort?					
. Involve creative effort?					
. Involve planning?					
. Provide for flexibility to meet unforeseen happenings?					
. Meet with standards of local employers?					
. Involve all lessons?					
. Follow a logical sequence?					
. Correlate with other subjects?					
• Does the proposed system of evaluation and measurement:					
. Provide for pretesting to determine where students are or where they should begin?					

	1	2	3	4	NA
. Provide for mastery tests?					
. Provide for charts or other means of recording student progress?					
. Relate to course and lesson objectives, or in other words, measure what it is supposed to measure?					
. Provide for corrective feedback for use in revision and updating?					
• Is the suggested methology:					
. Appropriate for each lesson?					
. Something you can do?					
. Appropriate for teaching aids available?					



UNIT 7

PUTTING IT ALL TOGETHER

So far, we have discussed:

- Ways individuals differ from one another and how this affects the teaching approaches you use
- Different techniques to use when you present information
- Various aids that will help you make your presentations more effective
- Methods of checking the progress of your students as well as your own
- How to select the content that will meet the needs of your students

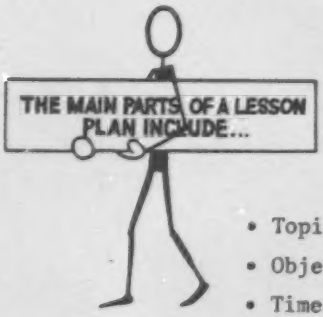
Now, let's put it all together. Before any large job is undertaken a plan of action is developed. Before you teach a lesson you need a plan of action; this is called a lesson plan. A lesson plan provides the orderly procedures for teaching a lesson efficiently. It need not be long (one or two pages), but should be complete and practical. It may be written in topic or sentence form, and should provide for all situations that may arise. A lesson plan gives the new instructor confidence that he or she has prepared the lesson adequately. It also provides a last minute substitute instructor with an idea of what must be done.

The importance of daily planning cannot be overemphasized, for it is almost impossible to be an effective instructor without preparation and planning. Part of the planning procedure is mental, and part is written. The written lesson plan serves as a guide to move the learning along in an orderly fashion. A series of lesson plans form an important part of your course.

With experience, lesson plans become easier to develop and less detailed. The lesson plan results from an analysis of the material related to the information being presented and from the selection and organization of the specific content desired. The objectives should be determined, and then the necessary content selected, to accomplish the stated objectives. The content should be listed in the best order for learning within the time allowed.

Lesson plans are useful because they:

- Plan for a smooth transition from previous lessons to new material
- Insure sequential and adequate presentation of material
- Offer time controls
- Provide for proper use of methods, aids, and equipment
- Establish a record of material presented and training accomplished
- Serve as a guide to the instructor so important points are not omitted
- Help to avoid attempted detours by students
- Provide for individual differences



- Topic
- Objectives
- Time required
- Teaching methods and procedures
  - Telling and showing through a variety of methods
  - Guiding through supervision

- Directing by pointing the correct way
- Training to form habits or impart proficiency by practice

- Instructional aids
- Questions for checking and review
- Assignment and references

The lesson plan is your guide and script. It should be flexible to accommodate interruptions, questions, and the lack of understanding on the part of the learners. Departure from the written plan can be expected as the students fail to understand some phase of the work, become especially interested in a particular part of the lesson, or contribute to the lesson from their own experiences. Sometimes a teaching plan may be used again with only minor revisions to adjust to changing needs and situations.

Many places have their own forms for lesson plans which the teachers must use. See your director or curriculum coordinator for any suggestions relative to the type of lesson plans you are expected to use in your situation. In case you have to use your own, consider the sample found on page 73.

The key to any lesson is the objective. State each objective in terms of what the students will be able to do as a result of your instruction. In other words, what can your students do after the lesson that they couldn't do before? What changes in student behavior were you able to bring about? This information will help explain why you are presenting the lesson, why the lesson is important to the students, and how to recognize when the desired changes or results have been accomplished. If you are not sure what to expect as a result of your instruction, you are less likely to be able to know if it happened.

LESSON PLAN

Date Prepared: Date Presented:

Topic:

Objective(s):

Tools, Equipment, and Supplies Needed:

Teaching Aids:

Preparation of Students

Presentation of Information

Topical Outline or Steps	Key Points (Things to say or do to make the teaching more effective)

Application (Practice by students)

Evaluation (Meeting trade standards)

Lead into Next Lesson (Assignment)

ALL THAT JUST TO SAY A PERFORMANCE OBJECTIVE STATES AN INSTRUCTIONAL INTENT OR DESCRIBES A PROPOSED CHANGE IN THE BEHAVIOR OF THE LEARNER

When you state that, "Students will acquire an appreciation of ..., an understanding of ...," or "a working knowledge of ..." you are not saying much more than words because it would be difficult to test for such a change. However, when you state that, "Upon completion of the instruction, the students will be able to remove and replace the wheel and tire of a 1932 Duesenberg SJ automobile in 15 minutes," the only fair thing to do is to show them how to do it, give them time to practice the task, and then test them to see if, in fact, they can do the job in 15 minutes.

A performance objective clearly describes:

- What the students will be able to do after a specific period of instruction
- The conditions under which the students will do the task
- The standard or measure of performance that will be used to determine when they have accomplished the task

Think of the simplest thing that you can have your students do that will begin to meet their needs, provide them with a challenge, and at the same time give them an opportunity to experience success as they learn that first topic in your outline. Identify that task and you are on your way. The rest goes together easily.

For the instructional portion of the lesson, many teachers use the four-step method which includes:

- Preparation
- Presentation
- Application or practice
- Evaluation

Each step should lead easily to the next and be looked upon as a logical outline for planning and executing the instructional goals. These steps enable you to teach in an orderly fashion and be reasonably certain that the students are learning or can perform.

PREPARATION

In this phase you are preparing the students to be receptive and ready to absorb what is presented. You state what you are going to teach, and then arouse the students' interest in the new information in order to stimulate their thinking and encourage attentiveness. You do this by discussing the need for the information and how the lesson fits in the total training program, using a vivid and dramatic approach, giving an appropriate anecdote, or showing a film.

One method used by many occupational teachers is to try to relate the knowledge to be learned to information previously known by the learners. This gives the students a feeling of security, because then they have some background for the new information or skill. If the students understand the value of the lesson and how it can affect their future, they are more ready to listen, watch, and learn.

The teaching methods you select depend on your personal choice and talents, the material being presented, and the type of students in your class. By using an appropriate method, you get the attention and interest of the students, and as a result gain control of the class at the beginning of the lesson.

PRESENTATION

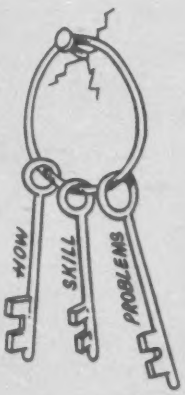
At this stage, you present the new information or skill, and make clear the facts and relationships basic to learning. This may involve a demonstration, the use of a film, a chart, a drawing on the chalkboard, or a model.

You should be flexible and use any desirable method to insure effective teaching and needed learning, remembering that the instruction is not adequate unless learning occurs.

From experience, you learn the kind of presentation that is best suited for different situations. This develops your self-confidence and a feeling of security that your teaching is producing learning.

In presenting the content of the lesson, you should use simple words, short sentences, and familiar terms. If some interest was developed in the preparation phase, it is necessary that time be allowed to explain the importance of the lesson, and how the information will benefit the students.

Key points which explain a process, solve a problem, or show how to perform a skill should be emphasized. These help the students over the difficult spots. The value of key points is enhanced by the use of charts, films, filmstrips, transparencies, or step-by-step demonstrations. Allow time for questions by the students and, in the case of demonstrations, the opportunity for several learners to try out the procedure. This provides you with a checkpoint to test the effectiveness of your presentation.



The presentation should be developed like an outline; in a numbered, step-by-step form. This helps you to keep your place and advance the instruction without omitting important points. In developing the lesson plan, you may wish to make notes on how to present specific points. It is also a good idea to keep track of how the lesson went, just in case you should repeat it at some future time. Sometimes, you may find that the material you have planned for a simple lesson is more than you can present at one class session. Then, it's back to the drawing board for a rewrite. Remember, the mind will absorb only as long as the derrier will endure. So, make your lessons brief and to the point.

In the presentation phase you should give the information in orderly steps; working from the simple and basic material to the more difficult and complex concepts, and arranging the presentation in the best learning sequence possible.

APPLICATION

The students should have an opportunity to apply or use the information presented as soon as possible after the lesson has been given. This step also offers you the opportunity to supervise the students during their practice sessions, correct misunderstanding, offer additional information, and provide individual instruction.

The type of application should be carefully considered and determined during the planning step. It should be up-to-date, and have special significance in the preparation of students for actual job situations.

The application step is time consuming but usually enjoyed by the students. They have the opportunity to perform, ask questions, and prove to themselves that they can apply the information and master the skills and knowledge you presented. The learning process is now focused on the student. You now assume the role of supervisor and you should be readily available to help when it is needed.

The application period needs to be carefully planned to insure that tasks, materials, and equipment are available for all the students to use.

EVALUATION

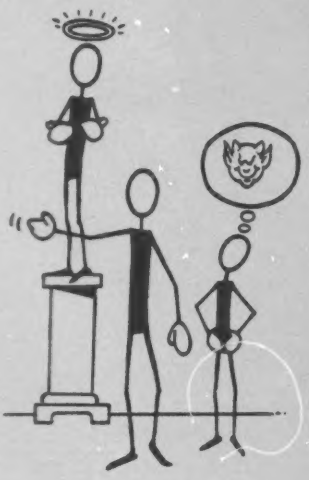
This step is used to determine the effectiveness of the instruction. If the instruction was adequate, the students can do what they learned without the teacher's supervision; they know or can perform the job or assignment unassisted.

If the information is mainly knowledge, written or oral questions may be used. The questions should emphasize the key points of the lesson. Questions should be planned to point up student weaknesses as well as ineffective instruction, encourage the students to accept more responsibility for learning, and provide a base for the evaluation procedure used at the training facility.

If the information is mainly performing a task, a performance test may be used. As the students do the task, you observe and rate them.

Regardless of the type of evaluation used, you should keep in mind the skills and knowledge needed to prepare the students for entry employment in a specific job. Questions should measure the necessary and important knowledge and skills.

Adults often resent comparative testing and grading. Testing is more effective when the students are aware of the program goals and standards of achievement.

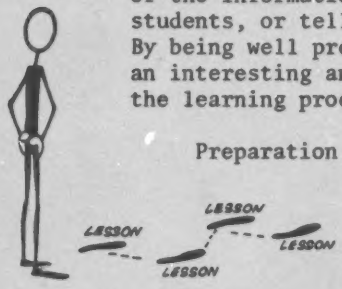


Testing benefits both you and students by determining if the learning achieved meets the stated objectives. The real purpose of testing is to find out the extent of the mastery of the skills and/or knowledge by the students, and not just a rating or grading of the students' work. The main worth is to point out learning weaknesses or to indicate where more instruction is needed.

In general, every lesson plan will vary in form each time it is prepared. The first plans you use will be more lengthly than those you make later. In either case, the plans should be kept simple, yet provide enough activities and meaningful experiences to result in purposeful learning through showing, telling, asking, and doing.

Sometimes beginning instructors find it advantageous to rehearse the presenting of the lesson before they give it in front of the class. This method helps to locate omissions and check on the sequence of the presentation.

Be sure to list the tools, materials, supplies, and equipment on your lesson plan. Include, also, any charts, models, films, transparencies, drawings or pictures that you need to make the presentation more effective and learning easier. The lesson plan should indicate the way you intend to arouse interest in the lesson, such as relating the new knowledge to previous lessons, showing importance of the information to the occupational needs of the students, or telling an amusing story or anecdote. By being well prepared, you should be able to give an interesting and relaxed lesson which will enhance the learning process.



Preparation is especially important for the first few class sessions. These classes set the pattern for the rest of the course. Classes do not move along by themselves so planning is necessary to have a smooth transition from one lesson to another. The plans should show the new skills and knowledge that you will teach along with the methods that you will use to arouse curiosity in the lesson and make your presentation interesting as well as informative.

The four-step method of instruction:

- Encourages an orderly organization of the teaching sequence
- May be adjusted to accommodate for individual needs
- Is flexible and allows for a variety of circumstances that might occur during the presentation
- Is acceptable to most educators

Summary

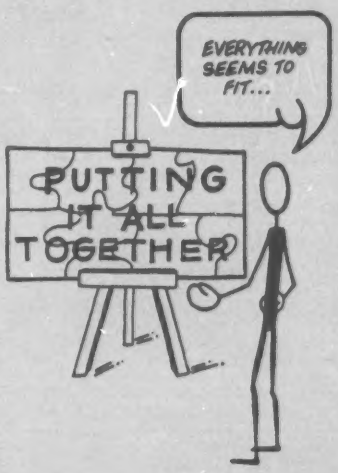
Getting ready to teach includes:

- Selecting the topic

- Determining time required for the presentation
- Establishing objectives (stated in terms of student accomplishments)
- Dividing the lesson into understandable parts
  - Listing important steps
  - Identifying key points
- Developing the lesson plan following the four-step method of instruction
- Assembling everything (tools, equipment, materials, teaching aids) that is needed and seeing that it is ready for use
- Arranging workplace in proper order to do the job

The teaching process includes:

- Preparation
  - Putting the students at ease
  - Stating the job and finding out what students already know about the topic
  - Arousing students' interest in the lesson
  - Showing why students need the information
- Presentation
  - Using a variety of methods to explain the information or operation
  - Instructing slowly, clearly, and patiently-one point at a time
  - Progressing from known material to new information, and from the simple to the complex
  - Encouraging questions to clarify key points
  - Being sure students are getting the information



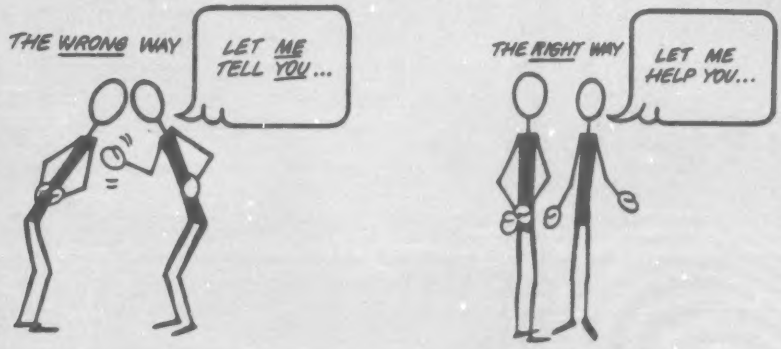
- Application -
  - Having students practice the task or use the information successfully
  - Correcting errors made by students
  - Asking students to explain key points
  - Making sure students understand the information
- Evaluation
  - Testing to see if students have learned the information or are able to do the skill taught
  - Putting students on their own with supervision gradually tapering off
  - Checking progress of students frequently

UNIT 8

WHERE

An early educator once said something about teaching consisting of a log with a student on one end and an instructor on the other. That, to me, is ideal *only* if you are studying the bark of the particular type of tree you are sitting on. The rest of the time you need more in the way of a classroom or lab. Hopefully, the area that you will use is a close approximation of an actual work site and includes supplies and equipment found on the job.

Probably, you will share this space with other instructors who, it is hoped, are enlightened as to who is the rightful owner of the facility. Unfortunately many "daytime" instructors become overly possessive and protective of "their" instructional areas and loose sight of the fact that the school is a public facility, bought and paid for by the *adult* members of the community. These instructors are only privileged to use the facilities between carefully prescribed times for the teaching of secondary students. The rest of the time (and in fact this is most likely the majority of the 24 hour day), the instructional area is not being used unless by adults. And who has a better right?



Well, rather than get into that age-old debate, try and prevent any friction by being a good neighbor.

It is important that you know which management and other noninstructional responsibilities are yours, which belong to others, and which are shared. Consult with your director or supervisor and find out:

- Times the shops or classrooms can be used by you or your students for:
  - Regular sessions
  - Class preparation
  - Study or practice periods
- The extent you are accountable for tool:
  - Loss
  - Damage
  - Breakage
  - Repair
  - Sharpening
- Where and how you can get parts, supplies, and other necessary items
- When and how you should report:
  - Absences from class
  - Damage
  - Loss
  - Need for repairs
  - Hazardous conditions
- Who is responsible for:
  - Cleanup of shop and classroom
  - Turning off lights
  - Closing of windows
  - Putting away tools and equipment
  - Correcting hazards
- Storage space available for:
  - Coats and personal belongings of students
  - Teaching aids

- Notebooks
- Students' practice work
- What you should do in an emergency
- Location of the:
  - Fire alarms
  - Fire extinguishers
  - Hoses
  - Fire exits
  - First aid kits
- How to get an ambulance or a doctor

Regardless of the nature of the paperwork that is required, the following suggestions should be followed:

- Be sure your work is accurate, complete, neat, and legible
- Gather data as-you-go; don't wait until the end of a term to try and bring your records up to date
- File reports on time; late reports are about as good as old newspapers
- File records in such a way that you can find them when you need them

Records should be kept for your own use to backup a report, justify an expense or a decision, or to keep track of progress. Find out what records, reports, and requisitions you are expected to keep and complete and to whom they are to be submitted. Common types of school records include:

- Enrollment at start of course
- Attendance at each session
- Number completing course
- Progress of each individual
- Tasks performed by each individual
- Requisitions or requests for:
  Supplies

- Tools
- Equipment
- Repair work
- Emergency purchases

- People who have borrowed teaching materials
- Use of supplies and materials
- Condition, breakage, and loss of tools
- Repair and maintenance of equipment
- Inventories
- Accident reports

Before assuming responsibility for the tools, equipment, and supplies that you are going to use, make a careful and complete inventory. This inventory should:

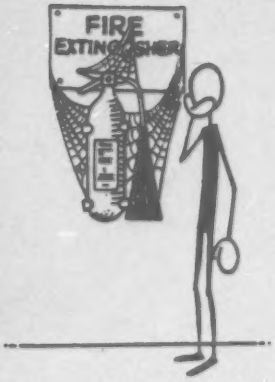
- List all the items and a description of their condition so you will not be held unfairly responsible for loss or damage (Maybe a photograph of the toolboards).
- Make it possible for you to order any missing equipment or supplies needed. Unless they are available at the time you need them, equipment and supplies are useless.
- Make it possible for you to put all tools and equipment in satisfactory operating order. Students should not be allowed to use tools or equipment that need repair.

While you are checking the shop, conduct a safety survey to determine:

- Hand tools that are:
  - Dull or worn
  - Without proper handles
  - The wrong size or kind for jobs planned
- Machines that are:
  - Too close together

- Without proper safeguards
- In need of repair, adjustment, and/or maintenance

- Dangerous conditions such as:
  - Exposed electrical wiring
  - Floors that are broken or slippery
  - Projecting objects
  - Materials with sharp or jagged edges
  - Defective equipment
  - Inadequate lighting
  - Insufficient ventilation



- Safety equipment that is:
  - Inadequate
  - Too old or inoperative
  - Too difficult to find or use
- Shop clothing and protective devices that are:
  - Inappropriate
  - In poor condition
  - Loose fitting

  Materials that are:
  - Flammable
  - Poisonous
  - Improperly stored

A complete safety survey of a shop will take time, but it is crucial because of the need to protect both your students and yourself. You are responsible for their safety as well as the condition of the equipment and the facility you use. If you are negligent, you may be held legally liable for an injury to a student.

The opening session sets the stage for future student-teacher relationships. You can either scare off those who are not sure of themselves or put them at ease by how well-organized you are when they first meet you. Some items to consider for the first day include:

- Coming in early and helping "direct traffic" by assisting new registrants find their classes
- Introducing yourself to your class and putting your name on the chalkboard
- Checking your registration sheets to be sure everyone is included and is in the correct class
- Asking students to introduce themselves to you and to other members of the class
- Giving an overview of the course and how you plan to conduct it

Going over regulations such as parking, shop safety, fire drills, and emergency procedures

Discussing routines such as tool and material distribution, storage, and cleanup.

Try to have something for the class to do the first session. This lets them know that they are going to get their money's worth. Before you let them go at the close of the first session give them an idea of what you will cover next time and what is expected of them (if anything), in the way of preparation. When you leave, be sure you have "done your duty" in relation to cleaning and locking up.

Every so often take a look at what you are doing by answering the questions listed for each of the following areas:

Instructional area

- Is there enough space, light, and ventilation, with special provision for dangerous fumes?
- Is the room operated at a comfortable temperature for working and/or studying?

- Have hazards been eliminated?
- Can students see me from their seats or workplaces?
- Does the room meet the highest standards of cleanliness for the occupation?
- Does the room meet the highest standards of orderliness for the occupation?
- Are workplaces arranged as they would be in the occupation?
- Are aisles kept clear?
- Are storerooms organized efficiently, with most-used items conveniently placed?
- Are there enough bins, racks, shelves, holders, and brackets to minimize damage from stacking or moving?
- Is there a system for controlling the flow of items in and out of storage areas?
- Is there protection against theft?

- Tools and equipment
  - Is it possible to take a "visual inventory" in the toolroom, noting what tools or other items are missing at any time?
  - Is it possible to know at all times who is responsible for each tool or item of equipment?
  - If a tool crib is used, is it treated as a training opportunity for the tool crib attendant?
  - Are all tools clean, painted, and marked to indicate ownership?
  - Are all tools in top operating condition?

- Safety program
  - Is safety emphasized in every lesson where it is relevant?
  - Are students wearing appropriate shop clothing, goggles, safety shoes, hard hats, gloves?
  - Do students avoid horseplay and carelessness?

- Are the students using all the guards on machines?
- Is action being taken to counteract human factors that cause accidents, such as: ignorance; carelessness; fatigue caused by continuous work, high speeds, and poor lighting and ventilation; or wrong attitude on part of the student?
- Are adequate precautions taken when chemicals are used?
- Are any of the cleaning fluids used dangerous?

- Is there proper exhausting of dangerous fumes?
- Do I know the fundamentals of first aid such as treatment for shock, bleeding, or suffocation?
- Do I know where to get help quickly?
- Am I using posters, films, or other teaching aids for emphasizing general safety items?
- Am I setting the example by following all the safety rules and regulations myself?

• Orientation procedures

Do the students know:

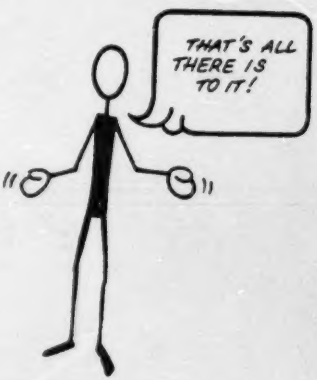
- Time the class starts or ends?
- When breaks will occur?
- Their assignments to work stations and the toolroom?
- Standards that must be met in terms of skill knowledge, attitude, and attendance?
- Advantages of successfully completing the course?
- Persons to consult about specific problems?
- Their individual responsibilities for tool and equipment care, cleanup, practice periods, and lesson assignments?

- Their relationships to other groups sharing the shop and/or classroom facilities?
- Importance of having a positive attitude?

Summary

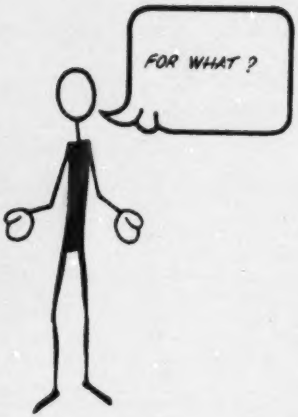
Long before the current emphasis on the environment, the word "ecology" was used simply to deal with the relations between organisms and their environment. Considering more current usage, the ecology of teaching is the total environment within which the instructor and students operate, and this includes:

- Sharing space with others
  - Time and room schedules
  - Clean-up procedures
- Doing the necessary nonteaching chores
  - Taking inventory
  - Obtaining materials and supplies
  - Maintaining tools and equipment
  - Keeping records and making reports
- Management and supervisory activities
  - Emergency procedures
  - Safe working conditions
- Student/teacher interactions
  - Orientation
  - Instructing
  - Assisting and correcting
  - Counseling
  - Evaluating



UNIT 9

WHY



For what purpose is all this, you ask? Well, let me answer by asking you a question. Let us suppose you are an electronics technician and that you teach in an adult occupational education center. There is a meeting scheduled for industrial electronic technicians at the same time that an inservice program for instructors on new methods of teaching electronics is being offered. Cost and accessibility are the same for both meetings. Now, the question: Which meeting would you attend? Are you going to be a tradesman who sometimes teaches, or a teacher who makes a living as a tradesman? Before you answer, I suggest you ponder a bit because both meetings would be of value to you. The one you choose depends upon you.

Because this handbook is confined to information about teaching, we will keep our comments to the things which will be expected of you as an educator, such as:

- Produce consistently acceptable graduates from students that are inconsistently unique and in need of individual teaching and attention
- Be certified by the State Education Department
- Develop interests and skills associated with teaching through membership and active participation in local, State, and national educational organizations
- Develop interests and skills associated with your occupational field through membership and active participation in local, State, and national trade organizations

You must be prepared to cooperate with others in the use of the instructional area. Not only is it important to be a good neighbor with those who use the same area at other times, but you must also be considerate of those whose job it is to clean and maintain the rooms. Don't overlook working with administrators, for it is their responsibility to provide support to you and information and reports to others. All this should happen while you carry out your function of helping your students to:

- Obtain the necessary skills and attitudes for entrance into and advance within their chosen occupations
- "Learn how to learn" so that they can cope with the ever-changing world and working conditions
- Develop the ability to think and solve problems

More and more, teaching is becoming a process of drawing out, helping, supporting, motivating, and counseling, rather than fact-feeding. The educational process is a mutual problem-solving experience as well as an exploration of a subject by student and instructor. It is not just a teacher providing answers while the students sit and listen. In addition to presenting your students with occupational information, you may find yourself assisting them to recognize their:

- Occupational goals
- Needs
- Strengths
- Weaknesses

The most common method of giving such help is during a student-teacher conference or interview. When you find yourself in a situation where you are dealing with personal problems:

- Be aware of nonverbal clues; rejection of the student can be communicated to him or her by your actions as well as your words
- Use simple language; big words or jargon can result in "zero" communications

- Ask one simple, straightfoward question at a time and wait for an answer
- Keep the conference on track; it is easier to avoid the real problem than to solve it
- Don't try to tell them what to do; just help them to reach their own decision by considering all the alternatives
- Don't be critical or pass judgment
- Keep whatever you talk about confidential

When helping students to establish occupational goals, be sure they consider:

- The general educational level the job requires
- The length of time required for specialized training, where it can be secured, and how much it will cost
- The special aptitudes or skills required for the job
- The specific characteristics of the job
- What the job pays vs what they need
- Whether the occupation is an expanding field or one that is being phased out
- The opportunities for advancement in the occupation
- The number of job openings compared to the number of applicants

From time to time you'll come up against problems with which you shouldn't deal. If you try to solve psychological, health, or serious financial or domestic problems you may only make them worse. Your role in these cases should be to keep hands-off and to refer them to appropriate professionals.

Hopefully, by now you have come to realize that teaching is simply helping others learn. You, as the instructor, plan experiences so the students are led as quickly as possible

to the attainment of their objectives. By this means, the amount of trial and error effort by students is kept to a minimum, hazards are avoided, and wastage of material is reduced. Teachers sometimes believe that the part they play in the teaching-learning process is the most important, and do not provide for student participation. As they say in the world of physics - no work takes place, no matter how much effort is exerted, unless something moves; and, as we stated earlier, teaching does not take place unless there is learning.

So what's in it for you? Try satisfaction. It's one thing to "make something" and quite another to see your students obtain a job with their newly developed skills and attitudes, and get ahead. Also, try frustration. Remember the old story about being able to lead a horse to water, but if he isn't thirsty, you've got problems. Not everyone that signs up is really interested in doing the work. There will be times when you try every tool in your teacher's kit and still are unable to motivate some of the students. Then is the time to realize that you can't win them all, and go on about your business of teaching those who wish to learn.

Summary

- Know my job as well as anyone else
- Seek advice and counsel from others in my field
- Realize that I am there to help the students achieve their goals
- Plan experiences that are appropriate to the goals of my students
- Use the most appropriate methods when instructing
- Check my effectiveness by measuring student progress

- Try continually to upgrade my occupational skills and as well as my teaching skills
- Set a good example by putting in a day's work for a day's pay
- Remember that I am the representative of the educational institution for which I work and act accordingly

Well, briefly, that is what it's all about. As the result of the information contained in this handbook, I hope you now have a better insight into the job of assisting adults as they improve their employability. Remember to keep your presentations interesting and informative, and continually adjust your instruction to meet the individual needs and rates of learning of your students.

I wish you success as an instructor. I know you will make it, and you will even look back on these trying times of adjusting to this new job of teaching as a wonderful and worthwhile experience.

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